REPORT OF OFF-SITE SOIL VAPOR ASSESSMENT FORMER AL PHILLIPS FACILITY MARYLAND SQUARE SHOPPING CENTER 3661 MARYLAND PARKWAY LAS VEGAS, NEVADA

FOR AL PHILLIPS THE CLEANER

URS CORPORATION JOB NO. 26698724.00005 APRIL 13, 2007



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#### 1 INTRODUCTION

URS Corporation (URS) has prepared this Soil Vapor Assessment report at the request of Al Phillips the Cleaner, Inc. (Al Phillips) in response to direction from the Nevada Division of Environmental Protection (NDEP). This assessment was conducted to evaluate the distribution of tetrachloroethylene (PCE) vapors in soil beneath the eastern portion of the parking lot of The Boulevard Mall and the western end of Ottawa Drive, and beneath Spencer Street on the east. The project background, scope of work, procedures, and results are presented in the following sections.

#### 1.1 SITE LOCATION

The former Al Phillips facility is located in the Maryland Square Shopping Center at 3661 South Maryland Parkway, Las Vegas, Nevada (Figure 1). The Soil Vapor Assessment study area is located between the eastern parking lot of The Boulevard Mall, west of Algonquin Drive, and Spencer Street on the east (Figure 1).

#### 1.2 SITE HISTORY AND INFORMATION

Based on Clark Count Assessor records and aerial photos, the site of Maryland Square Shopping Center, The Boulevard Mall, and the residential property east of the Mall were native, desert land until the 1960s when the properties were developed. Development of Maryland Square Shopping Center began in 1968 with the final building construction complete in 1970. Wonder World South Cleaners was located within the Maryland Square Shopping Center at 3651 Maryland Square Parkway from 1970 until the 1980s (Mullin-Kille, 1970; Luskey 1982). This building was located west of the former Al Phillips site and was demolished and a Clark County school was constructed on the location between 1999 and 2003. The former Al Phillips site was located within the same shopping center at 3659 and 3661 Maryland Square Parkway from 1969 to some time in 2000. One dry cleaning unit was operated at the former Al Phillips site during that time. The current property owner, Maryland Square LLC, demolished the former Al Philips building and other adjoining suites including the concrete floor and foundations during July and August of 2006. On March 14, 2007, Maryland Square LLC confirmed via email from Franklin F. Levy, Esq. that there were no current plans to begin construction at site. Currently the site is covered by asphalt except for the location of the former buildings. The site is currently fenced. The elevation of the site is approximately 1,993 feet above mean sea level.

Development of residential properties in the soil vapor study area east of the Al Philips site began in 1962 with most homes constructed by 1964. The final homes in the north-west region of the residential area were constructed in 1972. In 1964, the parcel of land for The Boulevard Mall was graded for construction with the structure and parking lots completed in 1968.

Based on a subsurface investigations in June 2005 (URS, 2005) and January 2007 (URS, 2007), the stratigraphy beneath the former Al Philips facility consists of a 1.5-foot to 2-foot layer of fine sand, then a 1.5-foot to 2-foot layer of hard fine sandy silt, then a 6.5-foot to 8.5-foot layer of firm to hard caliche, overlaying a 3.5-foot to 4.5-foot layer of fine sandy silt just above groundwater. A layer of sand was encountered at the bottom of a couple boreholes just above groundwater. Groundwater

beneath the former Al Phillips facility is approximately 17 feet bgs. The only significant potential migration pathway for PCE to leave the Al Phillips site is via groundwater that flows eastward across Maryland Parkway.

#### 1.3 PRIOR INVESTIGATIONS

During 2005, Al Phillips performed a soil investigation at the former Al Phillips dry cleaning facility located on the west side of Maryland Parkway (URS, 2005). During 2005 and 2006, eight groundwater-monitoring wells were installed in the residential area, which is the study area for this assessment. Al Phillips has performed quarterly groundwater monitoring within the study area for the last two years. Groundwater monitoring results have shown that the dissolved PCE groundwater plume beneath the study area is approximately 400 feet to 450 feet wide, is generally centered (eastwest) along Seneca Lane, and extends both east and west of the study area for this assessment. The concentration of dissolved PCE in groundwater collected from the study area has ranged from 350 micrograms per liter ( $\mu$ g/L) to 2,500  $\mu$ g/L. In general, the concentration of dissolved PCE is higher on the west side of the study area and decreases toward the east. Figure 3 is an aerial photo of the soil vapor study area that shows the locations of the groundwater monitoring wells and the concentrations of PCE detected in them during the December 2006 groundwater sampling event. This figure also shows estimated PCE concentration contours for this section of the groundwater plume.

In January 2007, URS performed a source area assessment at the site of the former Al Phillips facility (URS, 2007) to further evaluate the vertical and lateral extent of PCE soil contamination. Calculated in-place cubic yardage (cyd) volumes for PCE-contaminated soil yielded revised estimates of approximately 5,088 cyd at NDEP's concentration to protect groundwater of 7  $\mu$ g/kg; 1,832 cyd at the interim remedial goal of 100  $\mu$ g/kg; 624 cyd at the EPA residential PRG of 480  $\mu$ g/kg; and 204 cyd at the EPA industrial PRG of 1,300  $\mu$ g/kg. Based on some soil parameter testing it is estimated that approximately 12 to 30 pounds of PCE remain in the vadose zone at the source area.

#### 2 SITE SPECIFIC DATA

#### 2.1 UTILITY LOCATION

Southern Nevada's "Call Before You Dig", which is maintained by Underground Service Alert, was contacted prior to drilling. Subsurface public utilities within the right-of-way were marked by the services prior to drilling. A utility overview is shown in Figure 2.

#### 2.2 SITE GEOLOGY AND HYDROGEOLOGY

The site is located near the center of the Las Vegas Valley sedimentary basin. Based on installation of groundwater wells within the study area, the general stratigraphy within the study area includes hard fine sandy silts, fine sand, silty sands and gravels, and one or more layers of firm to hard caliche. Based on March 2007 groundwater measurements in shallow monitoring wells within the study area, the depth to groundwater beneath the study area varies based on the local topography and subsurface conditions and ranges from approximately 11 to 27 feet below ground surface (bgs). Specifically, the depth to groundwater in monitoring well MW-20 on the east side of The Boulevard Mall was approximately 26.8 feet bgs; at the dead end cul-de-sac of Ottawa Drive at Algonquin Drive depth to groundwater in well MW-18 was approximately 11.5 feet bgs.; at well MW-26 on Seneca Lane depth to groundwater was approximately 16feet bgs.; and at the cul-de-sac on Ottawa Circle just east of the study area depth to groundwater was approximately 12.7 feet bgs in well MW-27. Groundwater flow is toward the east at a general gradient of approximately 0.045 feet (vertical) per-foot (horizontal).

#### 3 PURPOSE AND SCOPE OF WORK

#### 3.1 PURPOSE

The purpose of the scope of work (SOW) of this Soil Vapor Assessment is to collect soil vapor samples in and near the residential area, analyze the samples for potential PCE concentrations, and provide the analytical results to NDEP, which will use the results to evaluate the potential risk of exposure for the public.

#### 3.2 SCOPE OF WORK

The Soil Vapor Assessment SOW was accomplished by performing the following tasks:

- Drilling six boreholes along a north-south line on the east side of the east parking lot of The Boulevard Mall. These soil vapor borehole locations were drilled at intervals of approximate 66 feet across the width of the dissolved PCE plume. These locations are shown on Figure 3. Soil vapor samples were generally collected at target depths of 5 and 10 feet bgs, and just above groundwater at approximately 20 feet
- Drilling four boreholes along an east-west line within the cul-de-sac right of way at the west end of Ottawa Drive, west of and just east of Algonquin Drive. This location is near the west side of the residential area. These boreholes were spaced as far apart as possible within the cul-de-sac. These soil vapor sampling locations are shown on Figure 3. Soil vapor samples were generally collected at target depths of 5 feet and just above groundwater at approximately 12 feet
- Drilling six boreholes along a north-south line within the northbound lane of Spencer Street. These boreholes were drilled at intervals of approximately 66 feet across the width of the dissolved PCE plume. These soil vapor sampling locations are shown on Figure 3. Soil vapor samples were generally collected at target depths of 5 feet and just above groundwater at approximately 10 feet
- Two soil samples were collected at the three soil vapor sampling areas for a total of six soil samples.
- Soil vapor samples were submitted to a stationary analytical laboratory for analysis of PCE.
- Soil samples were submitted to a soil-testing laboratory for analysis of soil characteristics.
- This soil vapor assessment report was prepared for submission to NDEP for evaluation. This report includes the following:
  - o Description of sampling procedures, deviations from planned sampling, and difficulties encountered during sampling.
  - o Site location map (Figure 1); a utility location map (Figure 2); a site plan,

including sample locations, groundwater monitor wells locations, groundwater analytical results, and groundwater concentration contours (Figure 3); and two maps of soil vapor concentrations and estimated soil vapor concentration contours (Figures 4 and 5).

- $\circ$  Tables of soil vapor analytical results in micrograms per cubic meter ( $\mu g/m^3$ ) and parts per billion of vapor (ppbv).
- o Cross sections through the soil vapor study area showing the general lithology beneath the residential neighborhood and depth to groundwater (Figures 6 and 7).
- Copies of field data (borehole logs, etc.), analytical laboratory documentation including chain-of-custody (COC) forms, and geotechnical soil testing results (Appendices).

#### 4 RATIONALE

This section presents the rationale for selecting the location of boreholes, the depth and number of soil and soil vapor samples, and the method for analyzing soil and soil vapor samples.

#### 4.1.1 Analytes of Concern

Based on the results of investigations performed by Converse and URS, the contaminant of concern is PCE and its breakdown products. Soil characteristics of grain-size analysis, moisture content, bulk density, and grain density were also tested to help evaluate the nature of subsurface soils within the study area for use by NDEP in calculating potential risk exposure to the public.

#### 4.1.2 Borehole Locations and Depths

Sixteen boreholes were drilled at the locations specified in Section 3.2 (Figure 2). The locations of these boreholes were selected to intercept the width of the dissolved PCE groundwater plume and to provide soil vapor data in the area where shallowest groundwater has been encountered. These boreholes were numbered SVB-01 through SVB-16 and were drilled using a track-mounted hollow stem auger drill rig. Boreholes were logged by field personnel to characterize the subsurface lithology (Appendix A). Boreholes were drilled so as not to encounter groundwater.

#### 4.1.3 Soil Vapor Sampling

In general, soil vapor samples were collected at target depths of 5 feet, 10 feet, and just above groundwater in the boreholes located on The Boulevard Mall property. Soil vapor samples were generally collected at target depths of 5 feet and just above groundwater in boreholes within the residential area. These samples were collected to evaluate the variations in concentrations of PCE in soil at these depths. Deviations to the target vapor sampling depths are discussed in section 6 of this assessment.

#### 4.1.4 Soil Sampling

Six soil samples were collected during the soil vapor assessment. Two soil samples, one shallow and one deep, were collected at each of the three vapor sampling areas. The shallow and deep soil samples were collected from a single borehole at each of the three locations. These samples were submitted to a soil-testing laboratory for analysis.

#### 4.1.5 Soil Vapor Analysis

Soil vapor samples were analyzed for volatile organic compounds (VOCs) (specifically PCE, trichloroethylene, 1,2-dichloroethylene, and vinyl chloride) using U.S. EPA Method 8260B incorporating vapor standards with a holding time of 48 hours. The detection limit for PCE was 100  $\mu g/m^3$  (15 ppbv).

#### 4.1.6 Soil Analysis

Soil samples were analyzed for grain size, moisture content, and bulk density by American Standard for Testing and Materials (ASTM) standards D-422, D-2216, and D-2937.

### 5 FIELD PROCEDURES

URS personnel performed the SOW following specific field methods and procedures. This section outlines the field equipment that was used, discusses the soil vapor and soil sampling procedures that were followed, presents the field documentation that was performed, and describes sample documentation and transport.

#### 5.1 UNDERGROUND UTILITY CLEARANCE

Southern Nevada's "Call Before You Dig", which is maintained by Underground Service Alert, was contacted prior to drilling boreholes at the three soil vapor sampling areas: Spencer Street northbound between Ottawa Drive and Cherokee Lane, Ottawa Drive west and just east of Algonquin Drive, and the eastern border of the parking lot located on the east side of The Boulevard Mall. Subsurface public utilities within the right-of-way were marked by the utility services. Gas, sewer, and water lines were located along northbound Spencer Street with overhead power lines on the west side of the street in the median. A water line and storm drains were located near the drilling location along Ottawa Drive. No utilities were located at the drill sites on The Boulevard Mall property. A private utility locator was contracted to confirm utility locations on the mall property, specifically noting the location of irrigation lines as well as electricity to light fixtures in the parking lot. A utility overview is shown in Figure 2.

#### 5.2 FIELD EQUIPMENT

URS and/or its subcontractor(s) maintained appropriate sampling materials and personal protective equipment onsite during the subsurface investigation. Materials included but were not be limited to:

Shipping supplies Chains-of-custody forms

Tedlar bags 3-way valves

60cc syringes pre-cut 1/8" OD nylon tubing
Leak detection compound Drive rods with retractable probe

Rotary drive hammer Soil sample jars Sample labels cooler with ice

Health & Safety Plan Chart for purge volumes

Borehole logs Field notebook

Safety Daily Task Analysis worksheets

Call Before You Dig tag numbers

Traffic Control tog numbers

Traffic Control tag numbers 55-gal DOT-approved drums
Drum labels Nitrile gloves

Hard hats
Safety glasses
First aid kit
telephone

Orange vests Hearing protection Tool box Field camera

Wash/rinse water Trash bags
Generator Gas for generator
Paper towels Sealing plastic bags

Soil sampling sleeves Teflon sheets Sampling sleeve end caps Track-mounted hollow stem auger rig

#### 5.3 SOIL VAPOR SAMPLING

Soil vapor sampling was generally performed near the target sampling depths specified in Section 4.1.2. A track-mounted hollow stem auger drill rig was used to drill the boreholes to a depth of 4 feet, 9 feet bgs, and just above the vadose zone (i.e. approximately 1 foot above the target soil vapor sampling depths). Soil vapor sampling drive rods and soil vapor sample probe were assembled to the appropriate length and 1/8-inch outer diameter nylon sample tubing was inserted into the rods. The drive rods were then placed inside the hollow stem augers to the bottom of the borehole and a rotary-drive hammer was used to drive the soil vapor sampling probe a minimum of 1 foot into the soil to the target sampling depth. Once the soil vapor sampling probe was driven to the target sampling depth, a 1-foot thick layer of bentonite slurry was placed in the borehole through the auger creating a seal above the soil vapor sampling probe. Disposable vapor sample syringes were used to purge three vapor volumes from the sample tubing, after which soil vapor samples were collected in 0.5-liter Tedlar bags. The amount of soil vapor collected for each sample was approximately 400 cubic centimeters. Once a soil vapor sample was collected, the Tedlar bag was labeled and placed in a cardboard box to protect the sample from direct exposure to sunlight.

The original Soil Vapor Assessment Sampling Plan (URS, 2007) stated that URS would collect thirty-eight samples; however, some samples were not collected due to vapor lock in the sampling tubing caused by high moisture content of the soil or bentonite slurry clogging the air slits in the soil vapor probe.

A leak-check compound (1,1-difluoroethane) was utilized during the collection of soil vapor samples to assess the effectiveness of collecting vapor samples from the subsurface soil gas and not ambient air. Prior to collecting a soil vapor sample a paper towel saturated with the tracer gas was placed on the ground within one foot of where the Tedlar sample bags were filled. All sampling equipment, including Tedlar bags and sampling syringes, were stored in a separate space from the leak-check compound.

Tedlar bag samples were numbered by borehole number, a dash, and then the depth from which the sample was collected. For example, a soil vapor sample collected from 5 feet bgs in borehole SVB-01 was labeled, SVB-01-05. Soil vapor samples were labeled with the date and time the sample was collected, the sample and borehole number, and name of the firm and signature of the individual collecting the sample. A chain-of-custody form was filled out with all the appropriate sample information and accompanied the vapor samples to the analytical laboratory.

After collection of a soil vapor sample, the augers were advanced to the next target sampling interval and the sampling process was repeated. This drilling and sampling procedure continued until the correct number of soil vapor samples were collected at each sampling location (SVB-01 through SVB-16). Quality Control/Quality Assurance (QA/QC) soil vapor samples and several split soil vapor samples were collected during this assessment. Boreholes were backfilled to near ground surface using hydrated bentonite pellets and the boreholes were capped with 2 feet of concrete that is

flush with the ground surface.

#### 5.4 SOIL SAMPLING

Two soil samples were collected at each of the three vapor sampling areas. The depth that the soil samples were collected in the boreholes was selected by field personnel based on the geologic conditions encountered. The soil drive samplers were placed on the drive rod and lowered into the hollow stem auger. The drive head was advanced approximately 1.5 to 2 feet into the ground using an approximate 140-pound drive hammer. The sampling head was removed from the borehole and the soil samples were taken from the sampling head.

The sleeved and ringed soil samples were placed in containers for transport to the soil-testing laboratory. Soil samples were numbered by borehole number, a dash, then the depth the sample was collected. For example, a soil sample collected from 5 feet bgs in borehole SVB-01 was labeled, SVB-01-05. Soil samples were labeled with the date and time the sample was collected, the sample and borehole number, and name of the firm and signature of the individual collecting the sample. A chain-of-custody from was filled out with all the appropriate sample information and accompanied the sleeved soil samples to the geotechnical laboratory.

#### 5.5 DECONTAMINATION PROCEDURES

Decontamination of drilling equipment was not required during this assessment, as the soil in the study area was not contaminated with residual PCE and drilling did not extend to groundwater. The soil vapor sampling probe was decontaminated to keep free of soil. New sample tubing and syringes were used every time a vapor sample was collected. Disposable equipment intended for one-time use was not decontaminated but packaged for appropriate disposal.

#### 5.6 FIELD DOCUMENTATION

Field activities were documented in writing and photographs were taken. URS personnel completed daily field logs and borehole logs (Appendix A). Each daily field log was dated and signed by URS personnel. Photographs were taken to record field activities (Appendix B).

#### 5.7 SAMPLE DOCUMENTATION AND SHIPMENT

Soil vapor samples and soil samples were labeled with the date and time the sample was collected, the sample number, location where the sample was collected, and name for the firm and signature of the individual collecting the sample. Tedlar vapor sample bags were stored in a container to protect them from direct exposure to sunlight. Soil samples were collected from the 55-gallon DOT-approved drums containing soil cuttings and were placed in a cooler with ice to preserve the samples until arrival at the analytical laboratory. VOC analytical results from these soil samples were used to manage disposal of soil cuttings.

Chain-of-custody (COC) forms (Appendix C) were used to document sample collection and shipment to laboratories for analysis. Each soil vapor sample shipment for analyses was

accompanied by a COC form. The COC form identified the contents of each shipment and maintained the custodial integrity of the samples. Generally, a sample is considered to be in someone's custody if it is either in someone's physical possession, in someone's view, locked up, or kept in a secured area that is restricted to authorized personnel. Until the samples were shipped, the custody of the samples was the responsibility of URS personnel. URS field personnel signed the COC form in the "relinquished by" box and noted date and time. The COC form was signed by the laboratory representative upon receipt.

#### 5.8 SITE RESTORATION

Areas of the work site that were disturbed or adversely impacted during the field investigation were restored to conditions similar to original at the completion of field activities.

#### 5.9 SAMPLE CONTAINERS, ANALYTICAL METHODS, AND PRESERVATION

Table 5-1, below, lists the type of sample; type, number, and size of container; chemical preservative; analytical method; and holding times for soil vapor and soil samples.

Table 5-1. Summary of Sample Containers, Analytical Methods, and Preservation

Sample Type	Type and Number of Container		Chemical Preservation	EPA Analytical Method	Holding Time
Soil Vapor	Soil Vapor Tedlar bags		Protect from direct sunlight	VOC by SW 8260B	48 hours
Geotechnical Soil	Stainless steel sleeve and rings	6" sleeves 1.5" rings	None	Particle size by ASTM D422 Moisture by ASTM D2216 Soil Density by ASTM D2937	none

Notes: VOA = volatile organic analysis

#### 5.10 QUALITY CONTROL

The type and number of field quality control samples collected during the soil vapor assessment were limited. Quality control samples generally consist of field duplicates, equipment or rinsate blanks, and trip blanks. Duplicate samples collected in the field provide precision information for the entire measurement system including sample acquisition, handling, shipping, storage, preparation, and analysis. The identity of duplicate samples is not revealed to the analysts and laboratory personnel. Duplicate samples are typically collected at a frequency of approximately 10 percent of the total investigative samples for each matrix.

Contamination of samples potentially introduced by reuse of equipment can be detected by means of analyzing an equipment or rinsate sample. Rinsate blanks are typically collected at a frequency of approximately 10 percent of the total investigative samples. Rinsate blanks consisting of the final rinse water are typically collected for non-disposable or non-dedicated sampling equipment after

decontamination has been performed. Trip blanks are used to investigate the integrity of the transport of samples to and from the laboratory. Typically, one trip blank per container per day is used.

Laboratory QA samples are called Laboratory Control Samples (LCS) and include method blank and matrix spikes. The LCS is based on the use of a standard, control matrix to generate precise and accurate data that are compared daily to the control limits. LCS information, in conjunction with method blank data, is used to assess daily laboratory performance. Matrix Spikes (MS) use an actual environmental sample to generate precision and accuracy that may be affected by the matrix. Typically, the MS is performed in duplicate as an MS/MS duplicate pair. MS/MS duplicate precision and accuracy information, supplemented with field blank results, are used to assess the effect of the matrix and field conditions on analytical data.

#### **5.10.1 Duplicate Samples**

The soil vapor SOW includes collection and analysis of four duplicate soil vapor samples during the assessment at the study area. These soil samples were analyzed for VOC as specified in Section 4.1.4.

#### 5.10.2 Rinsate/Equipment Blank

No Rinsate blanks were collected during the soil vapor assessment.

#### 5.10.3 Field Trip Blanks

Three trip blanks were used and analyzed, as soil vapor sampling occurred over a period of several days.

#### 5.11 DISPOSAL OF RESIDUAL MATERIAL

The EPA's National Contingency Plan (NCP) requires that management of investigative-derived waste (IDW) generated during sampling activities comply with all applicable or relevant and appropriate requirements (ARARS) to the extent practicable. The SOW followed the *Office of Emergency and Remedial Response (OERR) Directive 9345.3-02* (May 1991), which provides the guidance for the management of IDW. During the field activities, different types of IDW were generated, including used personal protective equipment (PPE), disposable sampling equipment, and soil tailings from soil boreholes.

Used PPE and disposable equipment was double-bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE and disposable equipment that was to be disposed of which could still be reused was rendered inoperable before disposal in the refuse dumpster.

Excess soil from drilling and sampling was placed in Department of Transportation (DOT)-approved 55-gallon drums. URS field personnel labeled the drums identifying it as soil (non-hazardous) and included the date, borehole number, firm, and signature of the URS personnel.

Analysis of the soil cuttings for VOCs confirmed that the soil was non-hazardous therefore it was disposed of at a permitted disposal facility. Decontamination water used for cleaning the reusable soil vapor probe was disposed of with the soil cuttings.

#### 6 RESULTS OF SOIL VAPOR ASSESSMENT

#### 6.1 SUBSURFACE LITHOLOGY

Subsurface lithology was logged by URS staff during drilling of the soil vapor boreholes. Borehole logs are provided in Appendix A. Six soil samples were collected from three of these boreholes (Table 6-1) during this assessment and submitted to a geotechnical laboratory for analysis of grain size, moisture content and bulk density by ASTM standards D 422, D 2216, and D-2937. Table 6-1 summarizes the soil testing data.

Table 6-1 SUMMARY OF GEOTECHNICAL SOIL CHARACTERISTICS

SAMPLE NUMBER	SAMPLE DEPTH (feet)	DATE SAMPLED	BULK DENSITY ASTM D 2937 (pcf)	MOISTURE CONTENT ASTM D 2937-04 (%)	GRAIN SIZE ASTM D 422
SVB-05-5.5	5.5	3/7/07	105.4	10.6	clayey sand with gravel
SVB-05-10	10	3/7/07	99.6	49.2	clayey silt
SVB-09-03	3	3/7/07	111.5	14.3	silty sand with clay
SVB-09-08	8	3/7/07	119.0	4.3	sandy gravel
SVB-13-8.5	8.5	3/19/07	118.5	6.8	gravelly sand
SVB-13-18.5	18.5	3/19/07	109.1	31.1	silty sand

Notes:

Sample number = SVB (Soil Vapor Borehole) - (borehole number) - (depth of sample in feet) pcf = pounds per cubic foot, % = percent

Cross Sections A-A', B-B', and C-C' on Figures 6 and 7 show the generalized subsurface lithology of the off-site soil vapor study area. These cross sections also show the locations and depths of soil vapor boreholes and monitoring wells and approximate groundwater elevation. Cross section A-A' (Figure 6) is oriented west to east and is located near the center of the groundwater PCE plume. In general, the lithology beneath the Mall parking lot consists primarily of gravelly sand with a couple feet of caliche located approximately ten feet bgs. Between monitoring wells MW-18 and MW-25 the shallow subsurface lithology consists primarily of sandy silts with some sandy gravel near the surface at well MW-18 and thin layers of caliche at well MW-25. In general, the subsurface lithology east of well MW-25 consists of gravelly sand of varying thickness overlaying an approximately 8-foot thick layer silty sand, overlaying a silty clay. This general lithology change from west to east typifies a decrease in depositional energy on an alluvial fan. However, silts and clay are likely to be braided with paleochannels of sand and gravel. Cross section B-B' (Figure 7) displays a south to north cross section of soil vapor boreholes SVB-11 through SVB-16 located on The Boulevard Mall property. In general the vadose zone lithology at this location of the Mall

consists of 4 to 16 feet of artificial fill on top of native gravelly sand, silty sand, silt, and layers of caliche at the northern and southern ends near boreholes SVB-11 and SVB-16. Gravelly and silty sands encountered at depths in boreholes SVB-12, SVB-13, and SVB-14 seem to indicate the presence of channeled coarse grained materials at this location which may reflect braided paleochannels below the static water level. Cross section C-C' (Figure 7) shows a south to north cross section of soil vapor boreholes SVB-01 through SVB-06 located on northbound Spencer Street. The shallow subsurface lithology consisted primarily of artificial fill over layering silty sand with a small layer of sandy gravel at borehole SVB-03.

#### 6.2 SOIL VAPOR RESULTS

#### **6.2.1** Analytical Results

In March 2007 thirty-two soil vapor samples and four duplicate soil vapor samples were collected from sixteen boreholes located within the soil vapor study area during this assessment and submitted to a State certified analytical laboratory for analysis of VOC by EPA test method SW 8260B. The original Soil Vapor Assessment Sampling Plan (URS, 2007) stated that URS would collect thirty-eight soil vapor samples; however, one soil vapor sample from each of the boreholes SVB-01, SVB-07, SVB-11, SVB-12, SVB-14, and SVB-15 was not collected due to difficulties encountered during field activities. In certain soil locations the soil formation was too tight to drive the soil vapor drive rods deep enough to collect a sample. In some instances when the target depth was achieved the formation was either too tight or too moist resulting in a vapor lock on the sample tubing. Also, there were instances where the air slits in the soil vapor sampling probe became clogged with bentonite slurry resulting in vapor lock.

Eleven soil vapor samples were collected along Spencer Street, seven along Ottawa Street, and 14 at the mall. The soil vapor samples were collected at approximate depths of 5 to 10 feet bgs and just above groundwater. Soil vapor analytical results and the depth from which they were collected are listed in Table 6-2. The analytical laboratory reported PCE concentrations in micrograms per liter  $(\mu g/L)$ . At the request of NDEP this reports lists PCE concentrations in micrograms per cubic meter  $(\mu g/m^3)$  and parts per billion by volume (ppbv). Calculations for conversion of units are listed in section 6.2.2. Chain-of-Custody forms and laboratory analytical results are provided in Appendix C.

Table 6-2 SUMMARY OF PCE VAPOR CONCENTRATIONS IN SOIL

CAMPLE	SAMPLE	DATE			PCE		LCC (1)
SAMPLE NUMBER	DEPTH (feet)	DATE SAMPLED	SOIL TYPE	μg/L	μg/m³	ppbv	μg/L
SVB-01-05	5	3/6/07	Silty Sand (Af)	2.5	2,500	369	ND
SVB-02-04	4	3/6/07	Silty Sand (Af)	3.0	3,000	443	ND
SVB-02-10	10	3/6/07	Silty Sand	ND	ND	ND	ND
SVB-03-05	5	3/6/07	Silty Sand (Af)	46	46,000	6,786	ND

SVB-03-12	12	3/6/07	Silty Sand	0.8	800	118	ND
SVB-04-05	5	3/6/07	Silty Sand (Af)	0.4	400	59	ND
SVB-04-12	12	3/6/07	Silty Sand	1.0	1,000	148	ND
SVB-05-08	8	3/7/07	Silty Sand	25	25,000	3,688	ND
SVB-05-98 (2)	8	3/7/07	Silty Sand	17	17,000	2,508	ND
SVB-05-13	13	3/7/07	Silty Sand	1.1	1,100	162	ND
SVB-06-08	8	3/7/07	Silty Sand	ND	ND	ND	ND
SVB-06-12	12	3/7/07	Silty Sand	12	12,000	1,770	ND
SVB-07-05	5	3/7/07	Silty Sand (Af)	11	11,000	1,623	25
SVB-08-05	5	3/7/07	Silty Sand (Af)	2.7	2,700	398	ND
SVB-08-10	10	3/7/07	Silty Sand	7.1	7,100	1,047	ND
SVB-08-910 (2)	10	3/7/07	Silty Sand	15	15,000	2,213	ND
SVB-09-05	5	3/7/07	Silty Sand (Af)	9.0	9,000	1,328	ND
SVB-09-10	10	3/7/07	Gravelly Sand	23	23,000	3,393	ND
SVB-10-05	5	3/7/07	Sand	42	42,000	6,196	ND
SVB-10-10	10	3/7/07	Sand	27	27,000	3,983	ND
SVB-11-10	10	3/20/07	Sandy Silt	0.5	500	74	ND
SVB-11-910 (2)	10	3/20/07	Sandy Silt	0.4	400	59	ND
SVB-11-15	15	3/20/07	Sandy Silt	ND	ND	ND	ND
SVB-12-05	5	3/20/07	Gravelly Sand (Af)	ND	ND	ND	210
SVB-12-10	10	3/20/07	Gravely Sand	3.0	3,000	443	ND
SVB-13-05	5	3/19/07	Gravelly Sand (Af)	24	24,000	3,541	ND
SVB-13-10.5	10.5	3/19/07	Gravelly Sand (Af)	37	37,000	5,458	ND
SVB-13-910.5 (2)	10.5	3/19/07	Gravelly Sand (Af)	45	45,000	6,639	11
SVB-13-20	20	3/19/07	Sandy Silt	35	35,000	5,163	690
SVB-14-10	10	3/19/07	Silt	87	87,000	12,835	ND
SVB-14-20	20	3/19/07	Silty Sand	170	170,000	25,079	ND
SVB-15-15	15	3/19/07	Silt	ND	ND	ND	240
SVB-15-20	20	3/19/07	Silt	0.2	200	30	12
SVB-16-5	5	3/19/07	Gravelly Sand (Af)	ND	ND	ND	30
SVB-16-10	10	3/19/07	Gravelly Sand	ND	ND	ND	ND
SVB-16-20.5	20.5	3/19/07	Silt	0.6	600	89	ND
Trip Blank	-	3/6/07		ND	ND	ND	ND
Trip Blank	-	3/7/07		ND	ND	ND	ND
Trip Blank	-	3/19/07		ND	ND	ND	ND
	Repo						
	1.5pc	0.1	100	15	10		

Notes:

Sample number = SVB (Soil Vapor Borehole) - (borehole number) - (depth of sample in feet)

PCE = tetrachloroethylene, LCC = leak check compound, Af = artificial fill, ND = Analyte not detected at or above the reporting limit

 $\mu g/L = Micrograms per liter$ ,  $\mu g/m^3 = Micrograms per cubic meter$ , ppbv = Parts per billion by vapor

 $<sup>^{(1)}</sup>$  1,1-Difluoroethane was used as the LCC

#### **6.2.2** Unit Conversion Calculations

The state certified analytical laboratory reported PCE concentrations in  $\mu g/L$  as documented in the laboratory analytical parts provided in Appendix C. At the request of NDEP, this assessment lists PCE concentrations in  $\mu g/m^3$  and ppbv. The following are calculations for conversion of units from  $\mu g/L$  to  $\mu g/m^3$  and ppbv. Results of these conversions are listed in Table 6-2.

 $\mu g/L$  to  $\mu g/m^3$ 

$$(1~\mu g/L)(1~L/1000ml)(1~ml/cm^3)(1x10^6~cm^3/m^3) = 1000~\mu g/m^3 \\ 1~\mu g/L = 1000~\mu g/m^3 \quad or \quad 0.001~\mu g/L = 1~\mu g/m^3 \\ \mu g/m^3~to~ppbv$$

First the ideal gas law PV=nRT is used to convert the measured PCE mass to a volume:

$$P_{air} V_{PCE} = n_{PCE} R T_{air}$$

 $P_{air}$  is air pressure [kPa] where P [kPa] = P [atm] x 101.325  $V_{PCE}$  is volume occupied by the contaminant n is the number of moles of PCE (mass of PCE / molecular weight of PCE) R is the universal gas constant 8.314 [L kPa K<sup>-1</sup> mol<sup>-1</sup>]  $T_{air}$  is air temperature in Kelvin [K] where T[K] = T[°C] + 273.15

To solve for volume of PCE:

$$V_{PCE} [L] = \underbrace{ \text{Mass}_{PCE} [g] }_{\text{Molecular Weight}_{PCE} [g/mole]} \quad \underset{X}{\times} \quad \underbrace{ 8.314 [L \text{ kPa}] }_{\text{K} \text{ mol}} \quad \underset{P_{air} [kPa]}{\times}$$

To calculate ppby, the volume of the PCE is then divided by the volume of the sample measured:

$$ppbv = \frac{V_{PCE} [\mu L]}{V_{sample} [m^3]}$$

Based on the two equations above, ppbv can be converted from  $\mu g/m^3$  using the following equation:

$$\frac{\text{ppbv} = \underline{\mu} \underline{g}}{m^3} \times \frac{1}{\text{Molecular Weight }_{PCE}\left[\text{ g/mole}\right]} \times \frac{8.314 \left[\text{L kPa}\right]}{\text{K mol}} \times \frac{x}{P_{air}\left[\text{kPa}\right]}$$

The molecular weight of PCE is 165.83 g/mole. Assuming a temperature of 25 °C (298.15 K) and 1 atmosphere pressure (101.325 kPa), ppby is calculated as follows:

<sup>(2)</sup> Soil samples SVB-05-98, SVB-08-910, SVB-11-910, and SVB-13-910.5 are duplicates for samples SVB-05-08, SVB-08-10, SVB-11-10, and SVB-13-10.5 respectively.

$$ppbv = \frac{\mu g}{m^3} \times \frac{1}{165.83 \text{ g/mole}} \times \frac{8.314 \text{ [L kPa]}}{\text{K mol}} \times \frac{298.15 \text{ K}}{101.325 \text{ kPa}}$$

#### 6.2.3 Discussion of Analytical Data

Based on the soil vapor analytical results from this assessment, 29 of 36 soil vapor samples submitted were found to contain PCE concentrations ranging from  $200 \,\mu\text{g/m}^3$  to  $170,000 \,\mu\text{g/m}^3$  (30 ppbv to 25,079 ppbv). The highest concentration of PCE detected in soil vapor during this assessment was in soil vapor sample SVB-14-20 which was collected at approximately 20 feet bgs, just above groundwater, located in the mall parking lot near the center of the dissolved PCE groundwater plume (Figure 3).

In general, the soil vapor PCE analytical data seems to reflect groundwater PCE concentrations. At several sampling locations there is a general increase in PCE soil vapor concentrations with depth. This is not the case at all sampling locations, however. For example, at sampling locations SVB-02 through SVB-05 (Figure 5) there are higher PCE soil vapor concentrations in the shallow portion of the soil vapor boreholes (4 to 5 feet bgs) than the deep (10 to 13 feet bgs). This may reflect the presence of utility trench backfill (artificial fill) material to approximately 5+ feet at these locations. At soil vapor sampling locations SVB-08 and SVB-09 (Figure 4) it appears to be the opposite situation where PCE soil vapor concentrations are lower in the silty backfill material than at depth in the relatively less silty native sands. Based on the analytical results, there doesn't appear to be a north-south concentration trend along Spencer. However, soil vapor sampling on the Boulevard Mall property appears to indicate that PCE soil vapor concentrations mimic PCE groundwater concentrations. PCE soil vapor concentrations may also be controlled by local subsurface lithology. Caliche and silts were encountered primarily in boreholes SVB-11, SVB-15 and SVB-16 at both ends of the sampling area at the Mall, while silty sands and sands were encountered in boreholes SVB-12, SVB-13 and SVB-14 in the center of the sampling area on the Mall property (Figure 4). These later boreholes are near what URS has interpreted from the groundwater data as the center of the groundwater plume near the west end of Ottawa where it abuts the Mall parking lot. In general, the lithology encountered in the boreholes on the Boulevard Mall property included a few to several feet of artificial backfill overlaying native soil, silts and sands. The general lithology beneath the soil vapor sampling areas is depicted in Cross Sections A-A', B-B', and C-C' (Figures 6 and 7).

## 7 QUALIFICATIONS AND SIGNATURES

This Off-site Soil Vapor Assessment report was prepared by URS for Al Phillips and submitted to NDEP. The qualifications of the individuals involved in the preparation of this report are known to Al Phillips and NDEP.

Prepared by: Reviewed by:

Scott Ball, C.E.M.

Project Environmental Manager

Dennis Connair

or Ball

Senior Technical Reviewer

## 7.1 CERTIFIED ENVIRONMENTAL MANAGER STATEMENT

The following statement is required by NDEP for Environmental Managers who practice in Nevada:

"I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein."

"I, Scott Ball, hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulations and ordinances."

Scott Ball

Certified Environmental Manager No. 1316

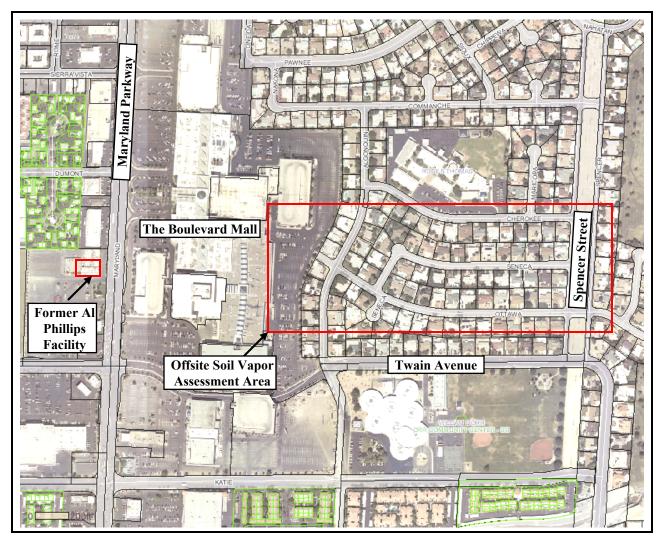
(Expires October 15, 2007)

CON Ball

## **8 REFERENCES**

- EPA, 2002. OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), dated November 2002.
- Luskey's Las Vegas Criss Cross City Directory, Lusky Brothers & Co., Publishers, 1982.
- The Mullin-Kille, Las Vegas, Nevada, City Directory Supplement, 1970.
- URS, 2005. Subsurface Investigation, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated July 11, 2005.
- URS, 2006. Source Removal Corrective Action Plan, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated November 13, 2006.
- URS, 2007. Quarterly Groundwater Sampling, 4th Quarter 2006, Former Al Phillips the Cleaner Site, Maryland Square Shopping Center, Las Vegas, NV, dated January 5, 2007.
- URS, 2007. Soil Vapor Assessment Sampling Plan, Former Al Phillips Facility, Maryland Square Shopping Center, Las Vegas, NV, dated January 24, 2007.
- URS, 2007. Source Area Soil Assessment, Former Al Phillips Facility, Maryland Square Shopping Center, Las Vegas, NV, dated February 23, 2007.
- US Geological Survey 7.5-minute Las Vegas SW, Nevada Quadrangle, 1983 modified.

Figure 1	Site Location Map
Figure 2	Utility Overview
Figure 3	Groundwater PCE Concentrations and Locations of Soil Vapor Sampling
Figure 4	Groundwater PCE Concentrations and Soil Vapor PCE Concentrations at Ottawa
	Drive and The Boulevard Mall East Parking Lot
Figure 5	Groundwater PCE Concentrations and Soil Vapor PCE Concentrations Along
	Spencer Street
Figure 6	Cross Section A-A'
Figure 7	Cross Sections B-B' and C-C'



Source: Clark County Assessors Web Site

Scale: 200 feet

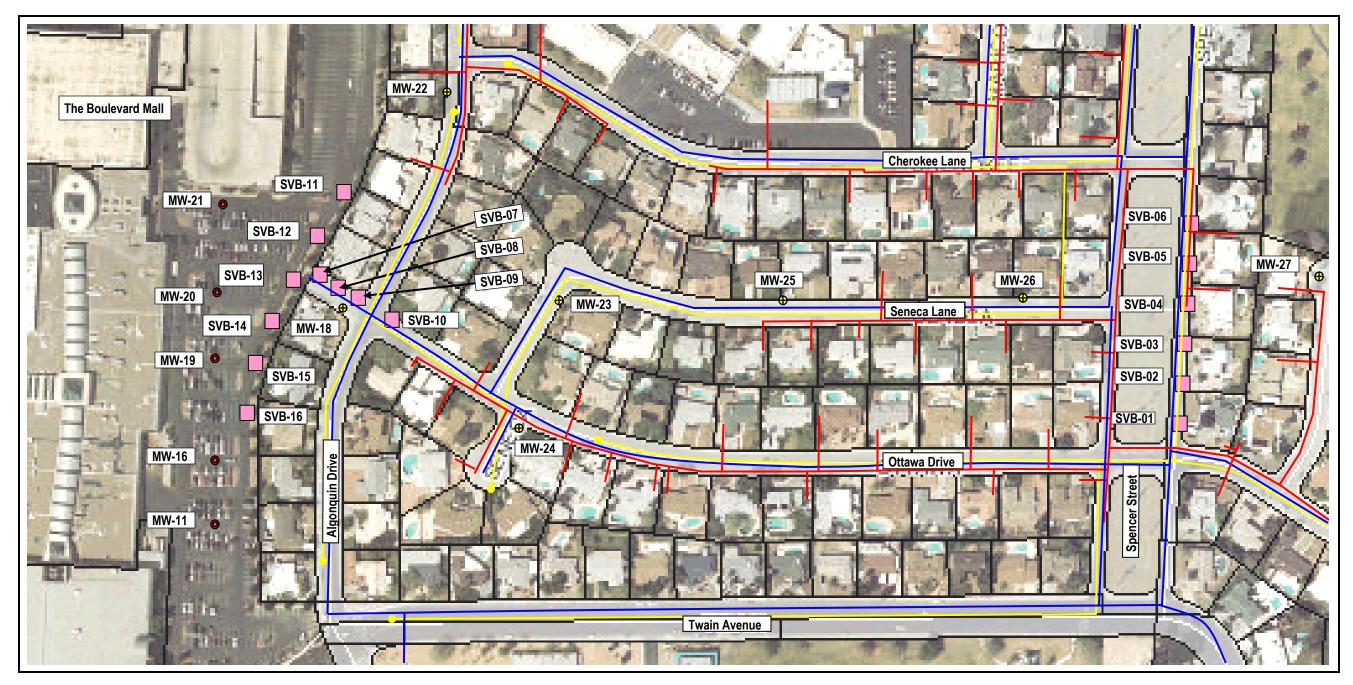


## SITE LOCATION MAP

Off-site Soil Vapor Assessment Al Phillips The Cleaner Maryland Square Shopping Center 3661 South Maryland Parkway Las Vegas, Nevada

April 2007 Job No. 26698724





Source: Clark County Assessors Web Site

Scale: 0 Feet 200 Feet



#### Legend:

- Approximate Location of Monitoring Well Installed by URS.
- Approximate Location of Monitoring Well Installed by Converse.
- Approximate Location of Soil Vapor Sampling Borehole.



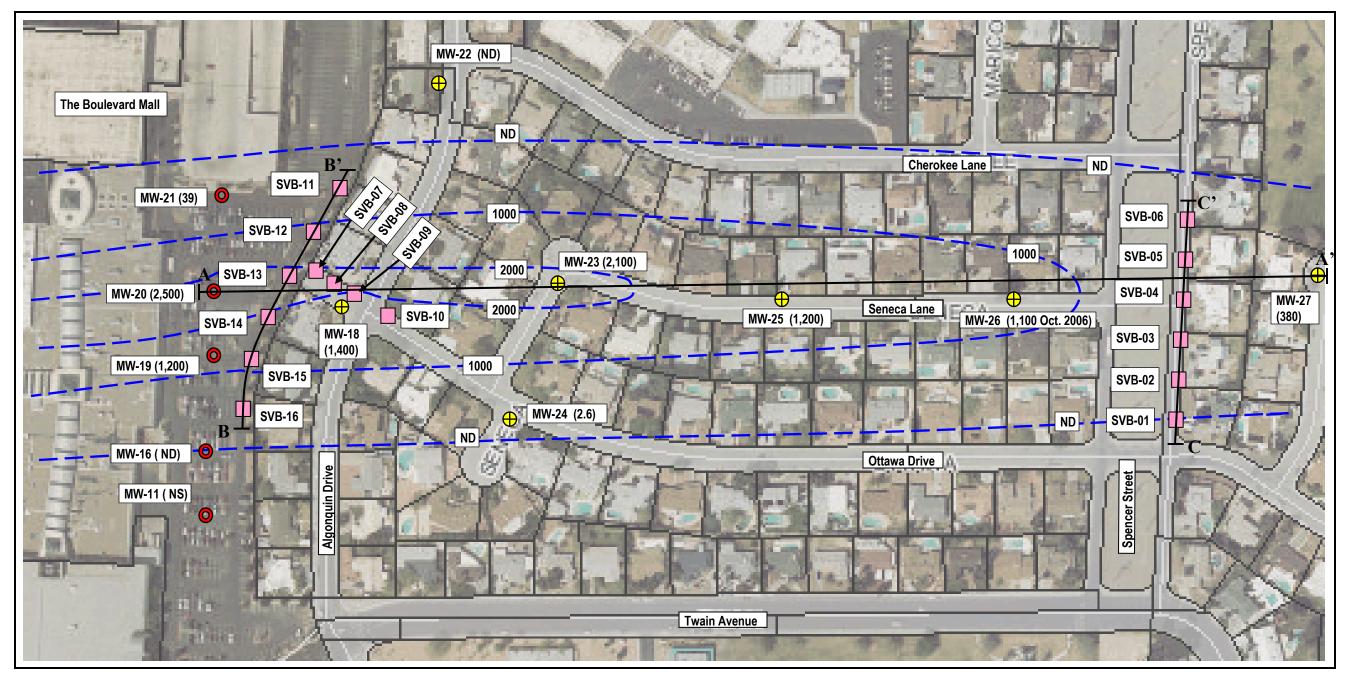
- Approximate Location of Gas Lines.
- \_\_\_\_ Approximate Location of Water Lines.
- Approximate Location of Sanitary Sewer Lines (yellow circles indicate ends of sanitary sewer lines).

## UTILITY OVERVIEW

Off-site Soil Vapor Assessment Al Phillips The Cleaner Maryland Square Shopping Center 3661 South Maryland Parkway Las Vegas, Nevada

April 2007 Job No. 26698724

MS Soil Vapor Assessment Fig2.ppt



Source: Clark County Assessors Web Site

Scale: 0Feet |

**→** 200 Feet



**URS** 

Legend:

Approximate Location of Monitoring Well Installed by URS Showing Concentration (µg/L) of PCE in Groundwater. ND is Non-detect. Analytical Data form October and December 2006.

Approximate Location of Monitoring Well Installed by Converse Showing Concentration  $(\mu g/L)$  of PCE in Groundwater. ND is Non-detect, NS is Not Sampled. Analytical Data from December 2006.

Approximate Concentration Contour of PCE in Groundwater.

Approximate Location of Soil Vapor Sampling Borehole.

#### GROUNDWATER PCE CONCENTRATIONS AND LOCATIONS OF SOIL VAPOR SAMPLING

Off-site Soil Vapor Assessment Al Phillips The Cleaner Maryland Square Shopping Center 3661 South Maryland Parkway Las Vegas, Nevada

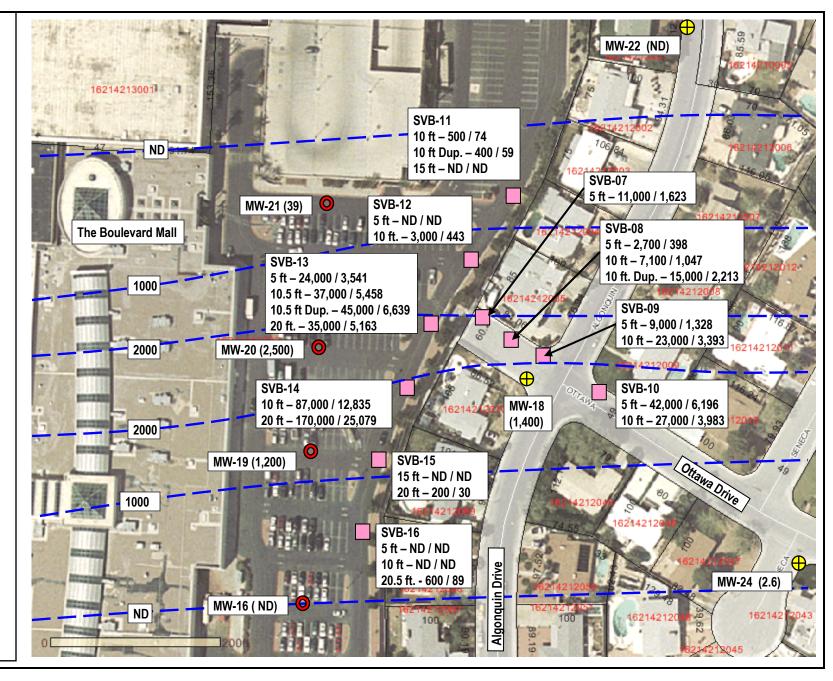
April 2007

Job No. 26698724

MS Soil Vapor Assessment Fig3.ppt

Summary of PCE Soil Vapor Concentrations										
Sample	Sample	Soil	Soil Va	por Concen	trations					
Number	Depth (1)	Type	ug/L	ug/m <sup>3</sup>	ppbv					
SVB-07-05	5	Silty Sand (Af)	11	11,000	1,623					
SVB-08-05	5	Silty Sand (Af)	2.7	2,700	398					
SVB-08-10	10	Silty Sand	7.1	7,100	1,047					
SVB-08-910 <sup>(2)</sup>	10	Silty Sand	15	15,000	2,213					
SVB-09-05	5	Silty Sand (Af)	9.0	9,000	1,328					
SVB-09-10	10	Gravelly Sand	23	23,000	3,393					
SVB-10-05	5	Sand	42	42,000	6,196					
SVB-10-10	10	Sand	27	27,000	3,983					
SVB-11-10	10	Sandy Silt	0.5	500	74					
SVB-11-910 <sup>(2)</sup>	10	Sandy Silt	0.4	400	59					
SVB-11-15	15	Sandy Silt	ND	ND	ND					
SVB-12-05	5	Gravelly Sand (Af)	ND	ND	ND					
SVB-12-10	10	Gravelly Sand	3.0	3,000	433					
SVB-13-05	5	Gravelly Sand (Af)	24	24,000	3,541					
SVB-13-10.5	10.5	Gravelly Sand (Af)	37	37,000	5,458					
SVB-13-910.5 <sup>(2)</sup>	10.5	Gravelly Sand (Af)	45	45,000	6,639					
SVB-13-20	20	Sandy Silt	35	35,000	5,163					
SVB-14-10	10	Silt	87	87,000	12,835					
SVB-14-20	20	Silty Sand	170	170,000	25,079					
SVB-15-15	15	Silt	ND	ND	ND					
SVB-15-20	20	Silt	0.2	200	30					
SVB-16-5	5	Gravelly Sand (Af)	ND	ND	ND					
SVB-16-10	10	Gravelly Sand	ND	ND	ND					
SVB-16-20.5	20.5	Silt	0.6	600	89					

Notes: PCE = tetrachloroethene, ND = Analyte not detected at or above the reporting limit, ug/L = Micrograms per liter,  $ug/m^3 = Micrograms$  per cubic meter, ppbv = Parts per billion by volume, (1) Depth in feet (ft.) below ground surface, (2) Soil samples SVB-08-910, SVB-11-910, and SVB-13-910.5 are duplicates for samples SVB-08-10, SVB-11-10, and SVB-13-10.5 respectively.



Source: Clark County Assessors Web Site Scale: 0 Feet 200 Feet



#### Legend:

Approximate Location of Monitoring Well Installed by URS Showing Concentration (µg/L) of PCE in Groundwater. Analytical Data form October and December 2006.

Approximate Location of Monitoring Well Installed by Converse Showing Concentration (µg/L) of PCE in Groundwater. ND is Non-detect, NS is Not Sampled. Analytical Data from December 2006.



Approximate Concentration Contour of PCE in Groundwater.



Approximate Location of Soil Vapor Sampling Borehole Showing Concentration ( $\mu g/m^3$  and ppbv) of PCE in Soil Vapor Collected From Shallow and Deeper Soil Above Groundwater.

# GROUNDWATER PCE CONCENTRATIONS and SOIL VAPOR PCE CONCENTRATIONS

#### AT OTTAWA DRIVE AND THE BOULEVARD MALL EAST PARKING LOT

Off-site Soil Vapor Assessment
Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

April 2007 Job No. 26698724

MS Soil Vapor Assessment Fig4.ppt

#### **Summary of PCE Soil Vapor Concentrations** Sample Sample Soil **Soil Vapor Concentrations** Depth (1) Type Number ug/m<sup>3</sup> ppbv SVB-01-05 5 Silty Sand (Af) 2.5 2,500 369 SVB-02-04 4 443 Silty Sand (Af) 3.0 3,000 SVB-02-10 10 Silty Sand ND ND ND SVB-03-05 5 Silty Sand (Af) 46 46,000 6,786 12 SVB-03-12 Silty Sand 0.8 800 118 SVB-04-05 5 Sand (Af) 59 0.4400 12 SVB-04-12 Silty Sand 1,000 148 1.0 SVB-05-08 8 Silty Sand 25 25,000 3,688 SVB-05-98(2) Silty Sand 17 17,000 2,508 13 SVB-05-13 Silty Sand 1.1 1,100 162 SVB-06-08 Silty Sand ND ND ND 12 SVB-06-12 12 12,000 1,770 Silty Sand

Notes:

PCE = tetrachloroethene

ND = Analyte not detected at or above the reporting limit

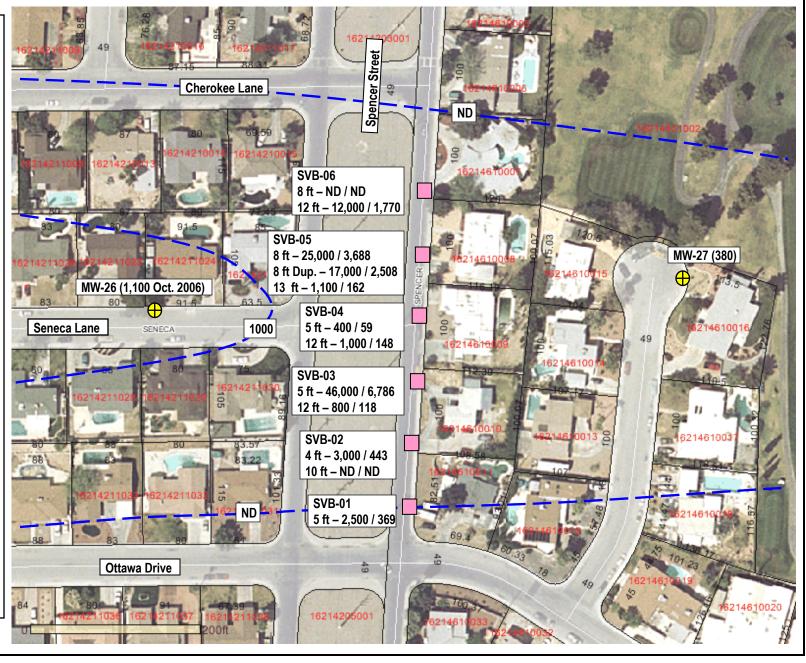
ug/L = Micrograms per liter

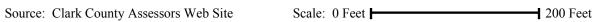
ug/m<sup>3</sup> = Micrograms per cubic meter

ppbv = Parts per billion by volume

(1) Depth in feet (ft.) below ground surface

(2) Soil sample SVB-05-98 is a duplicate for samples SVB-05-08.







#### Legend:

Approximate Location of Monitoring Well Installed by URS Showing Concentration ( $\mu g/L$ ) of PCE in Groundwater. Analytical Data form October and December 2006.

Approximate Concentration Contour of PCE in Groundwater.

Approximate Location of Soil Vapor Sampling Borehole Showing Concentration (µg/m³ and ppbv) of PCE in Soil Vapor Collected From Shallow and Deeper Soil Above Groundwater.

#### GROUNDWATER PCE CONCENTRATIONS and SOIL VAPOR PCE CONCENTRATIONS

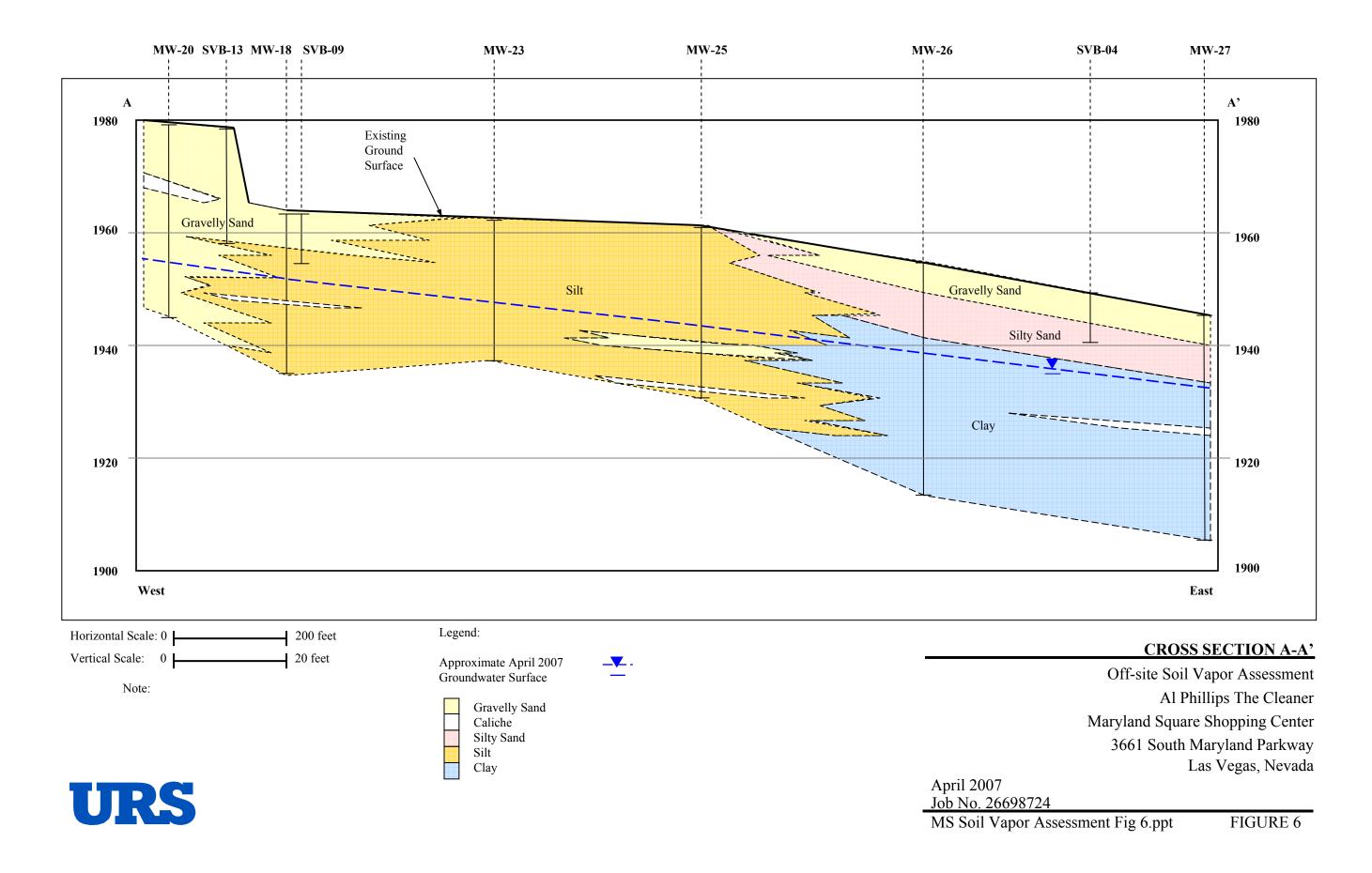
#### ALONG SPENCER STREET

Off-site Soil Vapor Assessment
Al Phillips The Cleaner
Maryland Square Shopping Center
3661 South Maryland Parkway
Las Vegas, Nevada

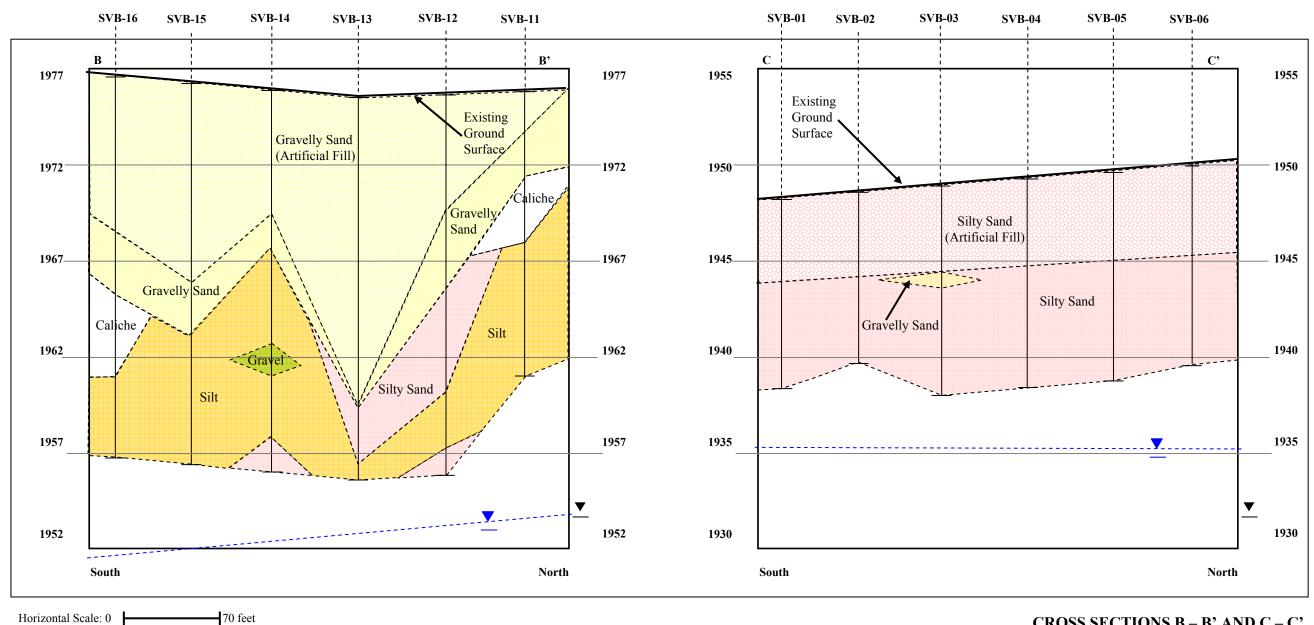
April 2007 Job No. 26698724

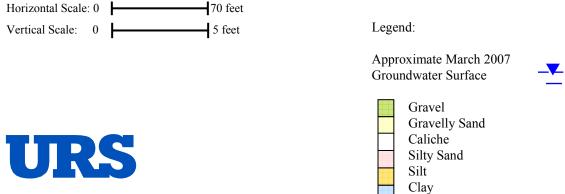
MS Soil Vapor Assessment Fig5.ppt

# **CROSS SECTION A – A'**



#### CROSS SECTIONS B - B' AND C - C'





# CROSS SECTIONS B - B' AND C - C'

Off-site Soil Vapor Assessment Al Phillips The Cleaner Maryland Square Shopping Center 3661 South Maryland Parkway Las Vegas, Nevada

April 2007 Job No. 26698724

MS Soil Vapor Assessment Fig 7.ppt



# APPENDIX A – BOREHOLE LOGS AND FIELD NOTES



# BOREHOLE LOG SVB-01

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started:
Date Completed:
Drilling Company:
Drilling Method:
Sampling Method:
Logged By:

3-6-2007 3-6-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe



					Logged By	•		Lisa Lowe			
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION		Elev.:	Remarks
0	0745					Af		0-4.5" ASPHALT  @ 4.5" SAND: silty, fine-grained, lt. brown, sl. moist, med. dense, poorly graded w. sl. plasticity, some pea grave artificial fill	el,		H&S Tailgate meeting
5 6 7 8 9	0910	V			SVB-01-05	SM		@ 4.5' SAND: silty, some gravel, fine- grained, lt. brown, sl. moist, med. Dens poorly graded	- se,		Soil vapor sample collected @ 5' bgs
10	0940							Bottom of borehole @ 10' bgs Groundwater not encountered			Difficult to drive soil vapor collection rod Soil vapor sample not collected @ 11' bgs due to vapor lock

# URS

# BOREHOLE LOG SVB-02

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started:
Date Completed:
Drilling Company:
Drilling Method:
Sampling Method:
Logged By:

3-6-2007 3-6-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe



					Logged By	•		Lisa Lowe		
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0	1000	V			SVB-02-04	Af		0-4.5" ASPHALT  @ 4.5" SAND: silty, fine-grained, lt. brown, sl. moist, med. dense, poorly graded w. sl. plasticity, some pea grave artificial fill  @ 4.5' SAND: silty, some gravel, lt. brown, sl. moist, med. dense, poorly graded  @5.5' same as above w. some pea grav		Soil vapor sample collected @ 4' bgs
10	1048	V			SVB-02-10			Bottom of borehole @ 9' bgs Groundwater not encountered		Soil vapor sample collected @ 10' bgs

#### **BOREHOLE LOG SVB-03** Al Phillips The Cleaner 3-6-2007 Date Started: Maryland Square Date Completed: 3-6-2007 Drilling Company: Offsite Soil Vapor Sampling **Eagle Drilling** Las Vegas, Nevada Drilling Method: Hollow stem auger Sampling Method: Active Soil Vapor Project No. 26698724 Logged By: Lisa Lowe Sample Number Time (0100 hrs) Blow Count (ft) PID/FID (ppm) Depth In Feet Graphic Log USCS/Other **SOIL** Sample Elev.: **DESCRIPTION** 1117 0-4.5" ASPHALT @ 4.5" SAND: silty, some pea gravel, fine-grained, lt. brown, sl. moist, med. dense, poorly graded, artificial fill Αf 2 SG @ 4.5' SAND: gravelly, silty, fine-1127 V SVB-03-05 Soil vapor sample collected grained, lt. brown, sl. moist, med. dense, @ 5' bgs well graded @ 5.5' SAND: silty, coarse-grained, lt. brown, sl. moist, med. dense, poorly graded SM10 Bottom of borehole @ 11' bgs 11 Groundwater not encountered SVB-03-12 1147 V Soil vapor sample collected 12 @ 12' bgs 13 14 15 16 17 18 19 20 21

22

232425

U		-	K			ВО		HOLE LOG SVB-04		H
Al Phillip Maryland Offsite S Las Vega Project N	l Square oil Vapo is, Neva	e or Sa .da	mpling		Date Starte Date Comp Drilling Co Drilling M Sampling I Logged By	oleted: ompany ethod: Method		3-6-2007 3-6-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe		
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0	1200	V			SVB-04-05	Af		0-4.5" ASPHALT  @ 4.5" SAND: silty, some pea-sized gravel, fine-grained, lt. brown, sl. moist med. dense, poorly graded, artificial fill  @ 4' SAND: silty, some pea gravel, fine-grained, lt. brown, sl. moist, med. dense, poorly graded		Soil vapor sample collected @ 5' bgs
11	1252	V			SVB-04-12			Bottom of borehole @ 11' bgs Groundwater not encountered		Soil vapor sample collected @ 12' bgs

#### **BOREHOLE LOG SVB-05** Al Phillips The Cleaner Date Started: 3-7-2007 Maryland Square Date Completed: 3-7-2007 Drilling Company: Offsite Soil Vapor Sampling **Eagle Drilling** Las Vegas, Nevada Drilling Method: Hollow stem auger Sampling Method: Active Soil Vapor Project No. 26698724 Logged By: Lisa Lowe Sample Number Time (0100 hrs) Blow Count (ft) PID/FID (ppm) Depth In Feet Graphic Log USCS/Other **SOIL** Sample Elev.: **DESCRIPTION** 0-4.5" ASPHALT Utilities cleared with air knife to 5.5' bgs 1344 5/11/15 SVB-05-5.5 @ 5.5' SAND: silty, fine-grained, lt. Soil sample collected @ 5.5' brown, sl. moist, med. dense, poorly Very soft drilling. 1401 SVB-05-08 Soil vapor sample and SMSVB-05-98 duplicate collected @ 8' bgs 1405 10 1417 5/10/14 SVB-05-10 @ 10' same as above w. some caliche Soil sample collected @ 10' stringers bgs Bottom of borehole @ 11' bgs 11 Groundwater not encountered 1435 SVB-05-13 Soil vapor sample collected 13 @ 13' bgs 14 15 16 17 18 19

202122

23

25

## Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

#### BOREHOLE LOG SVB-06

Date Started:
Date Completed:
Drilling Company:
Drilling Method:
Sampling Method:
Logged By:

3-7-2007 3-7-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe



Project N	No. 2669	8724			Sampling M Logged By	Method ':	:	Active Soil Vapor Lisa Lowe		
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0	1510	V			SVB-06-08	SM		O-4.5" ASPHALT  ASSUMED: SAND: silty, fine-grained, lt. brown, sl. moist, med. dense  Bottom of borehole @ 10.5' Groundwater not encountered		Utilities cleared with air knife to 5.5'bgs.  Began drilling after soil vapor sample SVB-06-08 collected  Soil vapor sample collected @ 8' bgs  Soil vapor sample collected @ 12' bgs
14										



#### BOREHOLE LOG SVB-07

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started: Date Completed: Drilling Company: Drilling Method: Sampling Method: Logged By: 3-7-2007 3-7-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe



					Logged By	·-		Lisa Lowe	All .	The second
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0 1 2	0749					Af		0-3" ASPHALT  @ 3" SAND: gravelly, lt. brown, sl. mo med. dense w. sl plasticity, well graded artificial fill		H&S Tailgate meeting
3	0809	v			SVB-09-05	SM		@ 1.5' SAND: silty, very fine grained, I brown, sl. moist, med. dense, poorly graded  @ 8' same as above w. some pea gravel		Soil vapor sample collected @ 5' bgs Field blank soil vapor sample collected
9 — 10 — 11 — 12 — 13 — 14 — 15 — 16 — 17 — 18 — 20 — 21 — 22 — 23 — 24 — 25 — 25 —	0855							Bottom of borehole @ 9' bgs Groundwater not encountered		Very difficult to drive rod  Soil vapor sample not collected due to vapor lock

#### **BOREHOLE LOG SVB-08** 3-7-2007 Al Phillips The Cleaner Date Started: 3-7-2007 Maryland Square Date Completed: Eagle Drilling Drilling Company: Offsite Soil Vapor Sampling Las Vegas, Nevada Drilling Method: Hollow stem auger Sampling Method: Active Soil Vapor Project No. 26698724 Logged By: Lisa Lowe Time (0100 hrs) Sample Number Blow Count (ft) PID/FID (ppm) Depth In Feet Graphic Log USCS/Other Sample **SOIL** Elev.: **DESCRIPTION** 0924 0-4.5" ASPHALT @ 4.5" SAND: gravelly, lt. brown, sl. Af moist, med. dense, well graded w. sl. plasticity, artificial fill @ 1' SAND: silty, lt. brown, sl. moist, 2 med. dense, well graded w. sl. plasticity @ 2' SAND: silty, some gravel, lt. brown, 0932 SMsl. moist, med. dense 1007 SVB-08-05 Soil vapor sample collected 5 @ 5' bgs @ 6' SAND: gravelly, silty, lt. brown, sl. moist, med. dense, well graded SG Bottom of borehole @ 8.5' bgs Groundwater not encountered SVB-08-10 1039 Collected soil vapor sample 10 SVB-08-910 1042 V and duplicate @ 10' bgs 11 12 13 14 15 16 17 18 19 20 21 22 23

2425



#### BOREHOLE LOG SVB-09

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started: Date Completed: Drilling Company: Drilling Method: Sampling Method: Logged By: 3-7-2007 3-7-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe



110,0001	.0. 2009	· -	•		Logged By	<i>'</i> :		Lisa Lowe	1		
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION		Elev.:	Remarks
0	1102 1108 1113 1125 1140 1142	B V B	9/8/15  42 50/5"		SVB-09-0.5/3 SVB-09-03T SVB-09-03R SVB-09-05 SVB-09-07 SVB-09-08T SVB-09-10	SM SG SM		0-4.5" ASPHALT 4.5" – 1' SAND: gravelly, lt. brown, s moist, med. dense, well graded w. sl. plasticity, artificial fill ② 1' SAND: silty, lt. brown, sl. moist med. dense, poorly graded, w. sl. plasticity, artificial fill. ② 2' same as above but more silt ② 4' SAND: silty, fine grained, some caliche, lt. brown, sl moist, med dense poorly graded  ② 6' SAND: gravelly (pea gravel), lt. brown, sl. moist, med. dense, well graw. large caliche modules ③ 8' SAND: silty, coarse grained w. s gravel, lt. brown, moist, med. dense  Bottom of borehole ② 9' bgs Groundwater not encountered	ded		Bulk soil sample collected from 0.5 to 3' bgs  Soil sample collected @ 3' bgs  Soil vapor sample collected @ 5' bgs  Bulk soil sample collected @ 7' bgs Soil sample collected @ 8'bgs  Soil vapor sample collected @ 10- bgs
	1				1						

## URS

#### BOREHOLE LOG SVB-10

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started: Date Completed: Drilling Company: Drilling Method: Sampling Method: Logged By: 3-7-2007 3-7-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Lisa Lowe



110,00011	0. 2009	· -			Logged By	<b>'</b> :		Lisa Lowe	Total San	and the same
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0	1221					Af		0-4" ASPHALT 4" – 1.5' SAND: gravelly, lt. brown, s moist, med. dense, well graded w. sl.	1.	
2 3 4 5 6 7 8	1234	V			SVB-10-05	SP		plasticity, artificial fill @1.5' SAND: lt. brown, sl. moist, med dense, poorly graded w. sl. plasticity	d.	Collected soil vapor sample @ 5' bgs
9	1250	V			SVB-10-10			Bottom of borehole @ 9' bgs Groundwater not encountered		Collected soil vapor sample @ 10' bgs
22 23 24 25										

# URS

#### BOREHOLE LOG SVB-11

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started: Date Completed: Drilling Company: Drilling Method: Sampling Method: Logged By: 3-20-2007 3-20-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Scott Ball



1 Toject N	10. 2007	0727			Logged by	•		Scott Ball		- 2/ /
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0	0838					Af		0-4.5" ASPHALT  4" – 4.5' SAND: gravelly, silty, lt. tan, moist, med dense, well graded, sl. plasticity, artificial fill  @4.5' CALICHE: silty, gravelly, crear		
5 <u> </u>	0852					CALICHE		white, dry, hard, pea gravel, not well cemented  @ 7' SILT: some sand, pink, dry, stiff		Soil vapor sample not collected @ 5' bgs
9	0905	v			SVB-11-10	ML		@ 9' SILT: reddish brown, moist, stiff med plasticity, some coarse sand	?	Collected soil vapor sample
11 12 13 14					SVB-11-910	ML				@ 10' bgs
15 16 17 18	0926	V			SVB-11-15			Bottom of borehole @ 15' bgs. Groundwater not encountered.		Collected soil vapor sample @ 15' bgs
19 20 21										
22 <u></u>										
I -	1									



#### BOREHOLE LOG SVB-12

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started: Date Completed: Drilling Company: Drilling Method: Sampling Method: Logged By: 3-20-2007 3-20-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Scott Ball



110,0001110.2005				Logged By	:		Scott Ball		
Depth In Feet Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION	Elev.:	Remarks
0 0715 1 2 3 4 5 0723 6 7 8 8	V			SVB-12-05	Af		0"-4" ASPHALT 4" – 7' SAND: gravelly, silty, lt. tan, sl. moist, med. dense, well graded, sl. plasticity, artificial fill.  @ 7' SAND: gravelly, v. dk. brown, sl. moist, med. dense, well graded gravel w. v. lt. plasticity		H&S Tailgate Meeting  Collected soil vapor sample  (a) 5' bgs
9	V			SVB-12-10	SM SM SM		<ul> <li>@ 11' SAND: silty, lt. tan, sl. moist, med. dense w. some caliche stringers</li> <li>@ 13' SAND: silt and some pea gravel, brown, moist, dense</li> <li>@ 16' SILT: sandy, some gravel, brown, moist, stiff</li> <li>@ 18' SAND: silty, fine grained, tan, moist, dense</li> </ul>		Collected soil vapor sample @ 10' bgs
20 0808 21 22 23 24 25 25 0808							Bottom of borehole @ 20' bgs. Groundwater not encountered		No vapor sample collected due to vapor lock.

## URS

#### BOREHOLE LOG SVB-13

Al Phillips The Cleaner Maryland Square Offsite Soil Vapor Sampling Las Vegas, Nevada

Project No. 26698724

Date Started: Date Completed: Drilling Company: Drilling Method: Sampling Method: Logged By: 3-19-2007 3-19-2007 Eagle Drilling Hollow stem auger Active Soil Vapor Scott Ball



					Logged By	·-		Scott Ball		To the last	
Depth In Feet	Time (0100 hrs)	Sample	Blow Count (ft)	PID/FID (ppm)	Sample Number	USCS/Other	Graphic Log	SOIL DESCRIPTION		Elev.:	Remarks
0	1227 1238 1254 1308	V	33 50/5"		SVB-13-05 SVB-13-8.5R SVB-13-8.5T SVB-13-10.5 SVB-13-910.5	Af		0-4" ASPHALT  4" – 16' SAND: gravelly, silty, lt. tan, moist, med. dense, well graded, sl. plasticity, artificial fill	, sl.		Soil vapor sample collected @ 5' bgs  Soil samples collected @ 8.5' bgs  Soil vapor sample and duplicate collected @ 10.5' bgs
16	1325	V	13/18		SVB-13-18.5R SVB-13-18.5T SVB-13-20	SM		@ 19.25" SILT: sandy, brn., moist, st some motteling in color, med. plastici Bottom of borehole @ 20" bgs. Groundwater not encountered	iff,		Soil samples collected @ 18.5' bgs  Soil vapor sample collected @ 20' bgs

#### **BOREHOLE LOG SVB-14** 3-19-2007 Al Phillips The Cleaner Date Started: 3-19-2007 Maryland Square Date Completed: **Eagle Drilling** Drilling Company: Offsite Soil Vapor Sampling Las Vegas, Nevada Drilling Method: Hollow stem auger Sampling Method: Active Soil Vapor Project No. 26698724 Logged By: Scott Ball Blow Count (ft) Sample Number Time (0100 hrs) PID/FID (ppm) Depth In Feet Graphic Log USCS/Other Sample **SOIL** Elev.: **DESCRIPTION** 1052 0-4" ASPHALT 4"-7' SAND: gravely, silty, lt. tan, sl. moist, med. dense, well graded gravel, sl. plasticity, artificial fill. Af No soil vapor sample 1104 collected @ 5' bgs @ 7' SAND: gravel, v. dk. brown, sl. moist, med. dense, well graded gravel, v. SG high plasticity @ 8.5' SILT: some gravel and course sand, lt. tan to cream, sl. moist, stiff SVB-14-10 1122 V Soil vapor sample collected @ 10' bgs ML11 12 @ 13' GRAVEL: sandy, silty, lt. brown, 13 GS moist, med. dense 14 @ 15" SILT: sandy w. some gravel, lt. 15 brown, moist, stiff, increase sand w. depth ML16 17 @ 18' SAND: silty, fine grained, lt. brown 18 SM to orange, moist, med. dense 19 SVB-14-20 Bottom of borehole @ 20' bgs, Soil vapor collected sample 20 1153 Groundwater not encountered @ 20' bgs 21 22 23 24

25

#### **BOREHOLE LOG SVB-15** Al Phillips The Cleaner 3-19-2007 Date Started: Maryland Square Date Completed: 3-19-2007 Drilling Company: Offsite Soil Vapor Sampling **Eagle Drilling** Las Vegas, Nevada Drilling Method: Hollow stem auger Sampling Method: Active Soil Vapor Project No. 26698724 Logged By: Scott Ball Sample Number Time (0100 hrs) Blow Count (ft) PID/FID (ppm) Depth In Feet Graphic Log USCS/Other Sample **SOIL** Elev.: **DESCRIPTION** 0913 0-4" ASPHALT 4"-11' SAND: gravely, silty, lt. tan, sl. moist, med. dense, well graded gravel, sl. plasticity, artificial fill. Αf 2 No soil vapor sample 0923 collected 0940 No soil vapor sample collected 11 @ 11' SAND: gravely, v.dk. brown, sl. moist, med. dense, well graded gravel, SG v.lt.plasticity 12 13 @ 13.5' SILT: some gravel and coarse sand, lt. tan to cream, sl. moist, stiff 14 1000 ML SVB-15-Soil vapor sample collected 15 V @ 15' bgs 15 16 17 @ 18' same as above but reddish brown 18 19 Bottom of borehole @ 20' bgs, 20 SVB-15-20 1022 V groundwater not encountered Soil vapor sample collected at 20.5; bgs 21 22 23

25

#### **BOREHOLE LOG SVB-16** Al Phillips The Cleaner 3-19-2007 Date Started: Maryland Square Date Completed: 3-19-2007 Drilling Company: Offsite Soil Vapor Sampling **Eagle Drilling** Las Vegas, Nevada Drilling Method: Hollow stem auger Sampling Method: Active Soil Vapor Project No. 26698724 Logged By: Scott Ball Sample Number Time (0100 hrs) Blow Count (ft) PID/FID (ppm) Depth In Feet Graphic Log USCS/Other **SOIL** Sample Elev.: **DESCRIPTION** 0718 0-4" ASPHALT No utilities **H&S** Tailgate Meeting 4"-8.5' SAND: gravely, silty, lt. tan, sl. moist, med. dense, well graded gravel, sl. plasticity, artificial fill. Αf 2 0742 V SVB-16-05 Soil vapor sample collected @ 5' bgs @8.5' SAND: gravely, v.dk. brown, sl. moist, med. dense, well graded gravel, SG v.lt.plasticity SVB-16-10 0805 V Soil vapor sample collected @ 10' bgs 11 @ 11.5' CALICHE,: silty, gravelly, cream to white, dry, hard 12 A L 13 I C 14 Н Е 0820 15 16 @ 16' SILT: reddish brown., moist, stiff, some coarse sand 17 ML18 19 Bottom of borehole @ 20' bgs, 20 0832 V SVB-16-20.5 Groundwater not encountered Soil vapor sample collected at 20.5; bgs 21 22 23 25

	_
	<b>K</b> . <b>3</b>
•	

PROJECT AP- Mary kind Square PROJECT NO. 26698724.00005

SUBJECT Depth to Grandwater By L. Lowe DATE 3/1107

5/1/07 Catacted supplies - Silinst water tool phope, socket wench, paper 1115 terrets, duon water. PPE Level D.

145 Arrived ed MS MW-27

MW-27 Depth towar 12.20 BTOC ~ 12.70 bys

1152 Meb to MW 24

Depth to water 15.71' BTOC ~ 16.07 bgs

BOZ MOD tO MW-18

Depth to water 11.32 BTOX ~ 11.52 bgs

1209 Mob to Blud Mall.

Verhall drop from east side of packing lot on east side of Mall to west end of Ottama Drive.

I 11.70 hop to button stighting leasthan 11.70

Tepth to water 25.61' Btox ~ 26.8' Bgs

1222 Mob to Office Depot beside Benternel Mall purchased boxes of peanuts to mail vapor samples water for drinking in field.

1240 Mob to AP-SO

Just 3/1/07

URS SHEET 2 OF 12 PROJECT At Maryland Square PROJECT NO. 26698724

SUBJECT Soil Vapor Assessment BY L. Loux DAT DATE 3-1-0-7 REVIEWED BY \_\_\_\_\_ DATE 26.8' bgs SVB-13 GW=24.7' bgs Ī - 543-12 + - 548-11 Depth to GW 5 VB -1 11.5 SVB-2 11.5 518-3 11.51 SVB-4 11.5 5VB-5-51810 14' bgs 548 - 11 - SVB-16.

(1978 3-1-07

TIDO	
URS	SILLI _=_O'
PROJECT_ SUBJECT_	AP- Maryland Square PROJECT NO. 26698724  Soil Vapor USSISSMENT BY USALOW DATE 6-5-073-5-07  REVIEWED BY DATE
1400	Bathered supplies for soil vapor assessment
	* to soil samples for geotechnical characteriation
	- Eagle Drilling will provide sample tubes runes
	* Shipping Supplies Chains-of-Custody Shipping labels packing tape boxes for shipment Pre-paid Fed Ex directions for closest Fed Ex (Shipment by 4:30pm) peanuts
	* Soil samples from drums for disposal  Sample jars « sample la bels  ice « cooler
	* Soil vapor samples  · tedlar bags · 3-way valves  · loo ac syringes · pre-cut 1/8" od tubing (Nylon)  · PID
	· Catibration gas for PID  · Leak delection Compound   Place in separate container  · paper towels  · Drive rods wi retractable tip away from sampling against.
	· rotary drive hammer · Labels
	* Paperwork  • H 1 5 plan  • Chout for purge volumes  • Borehoke loop  • Contact phone numbers  • Field nokebook.  • Work order for Eagle Drilling  • Soil Vapor Assessment, URS, Jan 24, 2007  • Safety Daily Safety task Analypis Worksheet.  • Call Before You Dig  • 2/28/07 called @ 1445 to exked • Ask that 044481 be remarked
	• Ottawa 046482 [Case by 3/16 to extend. Expires 3/20] • Boulevard Mall 046484 [ " 3/16 " " 3/20] • Spencer Street 046481 [ " 3/16 " " 3/20]
	<ul> <li>Traffic Control</li> <li>Waste - Soil</li> <li>URS provides dums-currently at MS sike. Eagle will take full drums back to site.</li> <li>Drum labels</li> </ul>

CispA 3-5-07

· ear pluep

PROJECT AP- MS SUBJECT Soil Vapor Assessment PROJECT NO. 26698724

REVIEWED BY \_\_\_\_\_

DATE 6-2-07 (DL 3/5/07 BY <u>LisaLowe</u>

DATE\_\_\_

ASTOT \* PPE/HAS · Steel toe boots

· nitrile gloves

. hard hats · safety glasses ·DI water

· First Aid Kit

· Telephone

· orange vests

\* MISC

\* tool box with misc. tools

# field comera

· Decon Solution

· Gooler for food + drinking water

· trash bago

• Generator · gas can

3/6/07

Liesa arrived on site at the former AP facility at MS Loaded one 55-gal DOT-approved drum onto truch.

Mobilized to Chevron at corner of Mayland Pkwy and Flamingo to purchase gas for generation

Mobilized next door to Albertsons to purchase ice 0627

0637 Mobilized to Spencer Street

Arrived at drilling site for on Spencer Street. Scott Ball already at location when I arrived. hisa and Scott walked down Spencer street and made note of utilities, specifically gas line which was marked. No other utilities had been sewer, covers for water, water meters in residential properties, and fire hydrauts were noted. Water line appears to run down middle of Street (North bound on Spencer). Sewer runs along length of street just east of center. Gas lines are well marked.

Tedephone + power line are over-head in median.

(isa18 3-5-07

URS SHEET <u>5</u> OF <u>12</u> PROJECT AP Maryland Square PROJECT NO. 26698724
SUBJECT SDI Vapor Assessment BY LISA LOWE DATE 3-DATE 3-6-07 REVIEWED BY \_\_\_\_ 3/6/07 0655 Lisa mobilized to intersection of Algorquir and Ottowa to wait for drillers. I Received a call from drillers. They are at former facility and will mobilize on to spencer Sheet. Lisa mobilized to Spencer Street. 0700 Drillers arrive at Spencer Street Site. Holly woodward (likes) and or James (JD) Dotchin (NDEP), Scott Ball (URS), Lisa Lowe (Likes) Roderick Easton (Eagle Drilling), and Edwin Gacusan (Eagle Drilling) are all onsite, Lisa and Scott lead HES tailgate meeting. Pointed out sever, gas, + water lines. Talked about hazards - trips:+ traffic being main concerns. Signed sheet.

At first borehole (SVB-OI) tocated of the NEC 0730 of Ottawa Drive and Spencer Street (north-bound) Started boring drilling with track-mounted auguring. Drilled to 4. Drill Rig: D-50 (Deitrich-50) Turbo. Augen using ~0800 ~ Ron Solis from secon arrived on site. Keady to take sample at 5-foot depth. (Used soil Vapor sampling kit to drive rods to 51). Drillers do not have bentonite for sturry to pour overthe in bore-hote to seal sample rods from ambient air. Ragle Drilling representative departed site to get bentonite and water from Eagle office. Eagle rep arrived with bentonite and water. Mixed N's 09 04 bag bentonite. Poured with borehole to give sample rods 1-2 foot deep seal, Place paper touch saturated with bak-check for sounding Obtained sample SVB-01-05. Ron took duplicate locations 0910 Sample for NDEP/SECOR. 5-foot section of auger added to dill rig. Drilled to 0925

10 ft. Drove sample rods to

150 to 10-07

12ft. Very difficult

URS SHEET 6 OF 12 PROJECT AP Maryland Square SUBJECT Soil Vapor Assessment PROJECT NO. 26698724 BY Lish (swe DATE 3-6-07

REVIEWED BY DATE to drive rods - soil very solid. I-2ft bentonite slurry added to borchole for seal. Attempted to satisfake sample. Vapor lock on syringe. Can only pull 10cc air. Due to risk of encountering groundwater, which is estimated to be 14ft, decided to skip this sample and move on to next borehole. 1000 Jeff Palmer of Secon arrived on site. JD departed site. 1005 Mobilized north along Spencer Street ~ 66 ft to SVB-02. Drilled to 4ft. Drove sample rod to ~ 4.5 ft. Sample rods are un un threads are stripped is head will not stay Drilled to "Aft. Added 1-2ft bentonite Shiring."

Encountered a lot of gravel at ~ 8.5'. Drove sample rods to ~ 10ft. Took sample SVB-02-10 1048 Mobilized ~ 60 ft north along Stencer street-to SVB-03. 1100 Jeff Palmer Departed from site. 11 10 Began drilling. Drilled to 4'. Drove sample rods to 5: 1117 Added 1-254 bentonite slurry to mixture. Place kak test composition of from Sampleana Sampled SVB-03-05 11a7 Continued dulling to 9'. Drove sample rads to 12: Added 1-2 ft bentonite string. Place paper towel saturated we leak test comp. cuithin I foot of samplingarea. Sampled SVB-03-12 1147 Scott departed from site. I am to call him before we start Moved to SVB-04 drilling @ SVB-05 1150 Moved to SVB-04 Began dulling SVB-DY. 1200 Stopped drilling for break. Kon and Holly departed from 1206 Site to pick up lunch. Rod, Ed, and Lisa took quich lunch break on site.

Returned to drilling Drilled to 4'. Drove sample

1026

URS PROJECT AP Mayland Square SUBJECT Soil Vapor Assessment	_ PROJECT NO. Ale (69) _ BY _ Lisa Lowe _ REVIEWED BY	SHEET 70F 12 8724 DATE 3-6-07 DATE
rods to 5'. Added 1-24 bents chick couped ~ 1 ft from sample	onite slurry to boring location.	chole. Placed lash
1235 Collected SVB-04-05. Drilled to 10'. Drove samy bentonite slury. Placed	_	
bentomite Slury. Placed	Han-check Composi	nd.

1252 Collected SVB-04-12

1255 Kon and Holly arrived back on site.

Lisa and Holly moved truck on up to SVB-05 while Ron Stayed back with drillers to back-All borchole.

This was first borehole in the vacinity of sets gas lines. Appearance of wide trench where work previously done on gas lines. Trench width from curb and extends east into street. Measured ! fromwest side of trench line to determine spot to drill. Placed rocks on spot so I could view where sewer line runs in companson to drill location.

Started preparing rods for sampling with Holly's help. Bon arrived at SVB-05 and helped with assymbly of

~1310 Noticed drillers had arrived and were already drilling. Ask I walked to back of truck so I could view what was going on with drilling. As I reached near of truck gas began spewing from borehole. Immediately noticed driller had started drilling directly on top of which line. I ordered evacuation of area and to dial Kon, Holly, and Rod immediately called 911 as evacuating from site.

LIGHBA 3-6-07

S

OVO		SHEET $8$ OF $12$
PROJECT AP- MS	PROJECT NO. 2669	8724
SUBJECT SV A	_ BY LIST LOWE	DATE 3-6-07
	REVIEWED BY	DATE

1316 I carled Scott to notify him that ges line had been hit. 1330-1500

Five trucks arrived on site.

Southwest Gas arrived on site

All but I Fire-truck departed site once SWG began to contain I Slow the flow of gas leak.

Scott Ball arrived on Site.

JEST Palmer arrived on site.

JD (NDEP) arrived on site.

Scott spoke to Victor Cline of Eagle Drilling on the phone.

Scott and I met with Michael Crimble of SWG to

discuss sequence of events. Along with Michael (SWG) Scott and Lisa marked locations of SVB-05 and SVB-06.

Lisa met Michael at Algorgum/OHowa to mark SVB-7 through SVB-10.

1530 Lisa mobilized to Kinko's / Fed Ex to mail samples. To kee Lisa departed site for the day.

(iSA) 3607

URS	3		SHEET 9 OF 12
PROJECT	AP Maryland Square Soil Vapor Assessment	_ PROJECT NO. 26698	724
SUBJECT	Soil Vapfir Assessment	BY LISA LAUSE	DATE
0600	Stopped at Chevron on E.D.	esert Inn Rd to buy	ice and pens.
0612	Drove through Boulestard Mal	I to Check that "Go	ett utilities had
0010-	Drove through Boulevard Mal been marked. White, dashed line related to sprinkler system. I people working on irrigation	tholly had previously se system out that lo	hat appear to be en (within past 3 weeks) cation.
0614	Arrived at spench street.		
	Asphalt from SVB-01 through	h SVB-04-activities	not dry.
	Set up traffic cones.		
	Scatt ball curried on site	-1 4 1	
0650	Victor Cline and drillers - 1		1
	Victor + Scott discussed place		
	knife. Drillers are going to		et only for air knife
0700	scott mobilized to Algorquin/otto Ed + Rod setting up track mo	on intersection sunted augus rig.	
	Ron Solis arrived on site		
-0707	Holly Woodward arrived on Si	te.	
0712 0713 0718	Drilled through asphalt at SVB- Holly mobilized to Algengum 10th Brilled through asphalt at SVB-	-06 towa-	
	Rod loaded rig outo trailer Victor mobilized on foot to Alg		
	lisa mobilized to Algongim 10		
	At west dead-end off Otton		with Algonquin
	H+S tai ligate meeting		
0747	Brill rig inplace		
C1809	Fook sample SVB-07-05		
0810	GES reparrived. Tom	+ Thompson (234-1	701)
0815	Took break from drilling for (Rod + Ed)	rGES to meet win	th Eagle Drilling crew
0828	Footin Collected Field Blank CT.	in Blank) from SVB-C	77 job sik.
0840	JD (NDEP) arrived on site.	,	- 4
'	(1882 3	2-7-57	•
	UN W	, , .	

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T		D	C
		ĸ	-
•	•		~

UR	S			SHEET 10 OF 12
PROJEC	TAP-US		PROJĘCT NO. <u>2669</u>	8724
SUBJECT	r <u>SVA</u>		BY <u>liga Low</u>	DATE 3-7-07
		an. 15)		
		g (SW6) arrived	_	
0910	Driller r	emoving anger a	from 508-07.	
0915	Mob to	5VB-08		
0924	Beigen Dr.11	ikg		
0932	- Soil Samp	50-80-875 De	r R	
0935	Drillers do n	not have end caps	. Ed departed 51k to	s obtained cops
1001		arra veturned to		·
1007	Collected	SVB-08-05		
	Continued	,		
		•		
1042	,. <b>l</b>	SVB-08-09 SVB-08-99 (1	suplicate)	
1046	JD & Ron	Departed from si	He	
1050	Ed and Jud	an arrived on site		
1058	Juan depart	old site		
		rill to SVB-09-		
1102	Bears di	Lline		
1108	Collected	soil from O.	5' to 3' for bul	K sample SVB-09.035
1113	Collected	Soil Sample SV	B-09-03T and	K sample SVB-09.035. SVB-09-03R
1125	Collected	8VB-09-05		
แนะ	Collected	! bulk soil sa	mule SVB-09-07	from 7-81
1142	Collected	Soil Samples S	mple SVB-09-07 SVB-09-08T r	JUB-09-08K
1203	s Collected	SVB-09-10		
			1 5/2-11	_
1221	- 100 drill Began d	withing with the strings.	igum 70 500-10	ر
1234	Collected	SV8-10-05	aguin to SVB-10	
1250		SVB-10-10		
1310		•		
,0,0	Comp vop	ald site.	3-7-07	

## IIRS

SHEET 11 OF 12 PROJECT NO. 26698724 PROJECT AP-MS BY Lisa Lowe SUBJECT SVA REVIEWED BY \_\_\_\_\_ DATE 1320 Lisa and Rod mobilized to spencer St SVB-05. Air knife was used to clear litilities and borehole excavated to 5'71. 1344 Boil sample Collected SVB-05-5.5 1401 Collected SVB-05-08 1405 Collected SVB-05-98 (Duplicate) Drilled to 10 Rt 1417 Collected Soil Sample SVB-05-10 1425 Scott arrived 1435 Collected SVB-05-13 Herse 1440 Scott departed 1445 ID arrived 1450 Jeff Palmer and Gracie Giller arrived 1454 At SVB-06 Depth to bottom = 5' 4" after airknik cleaned hole 2504 Collected SVB-06-08 1523 Collected SVB-06-12 Holly deputed to Fed Ex to drop of samples 1548 1549 Called Traffic Control - Toni Call off th LV 290719 KOI Ron last site 1607 Gracie + Jeff Jeff site 1608 Rod left Ste 1610 Ed left site 1618 JD left site 1619 Pulled traffic cones to curb @ Spencer. Noto to Ottawa 1622 Pulled traffic Cones to curb @ OHana. 1626 Deported site for the dan (15AB) 3-7-07

PROJECT_ SUBJECT_	AP-MS SVA	PROJECT NO. 26698 BY LISA LSWC REVIEWED BY	SHEET 12 OF 12 724 DATE 3-8-0.7 DATE
0800	Arrived & former Al Square. Soil drums fro off at this site as reg Mobilized to SVA area of utility markings.	Phillips faciting on SVA had no wested in the	at Maryland t beek dropped work plan.
	Mobilized to Ottawa picked up cones an pictures & each of	c site. Traffic ( cl site was c in borehole local	Control bad lean. Took two.
	Mobilized to Spence picked up comes a pictures of each	nd ste was C	lean. Toole
6826	Mobilized to URS	office. Stopp	ed to refuder
0900	Mobilized to URS on the way Spoke to Scott Cabout in Adoly Called Victor	reident report an	d began vorkuig
~ 1300	to notify that di	rums had not	been left on
1230	Spoke to Louise as Samples have been Turn-tround Time		
	Turn-tround Time		

URS PROJECT AI Phillips MS. PROJECT NO. 26698724 Soil Vegy sampling, BY STEVILLE REVIEWED BY \_\_\_ DATE 3-19-07 0600 Arrived @ office to pack up track Coursed & office 0648 Got waster for field 0700 Drillers and NDEP arrived on site, Holly unived. 0705 Set up at Davelole 8 VB-16. Add HES meeting and every one 5 Bud His form Stanted drilling @ SVB-16 Collected soil vapor sample @ 5' bgs in SVA-16-5. Collected soil vapor sample @ 10 bgs in SVB-16-10 0805 Another driller arrived with Bentonite Plug for borcholes *0*820-Collected Soll vapor sorupti & 20,5 bys in SUR-16-20.6 Briller began to pull up from this borehole 0832 0844 Backfillal w 5.5 bigs of bentonite Began drilling@ SVB-15, vapor samples were yot able to be collected @ & and 10' bgs, trying to got sample 015'45. 0913 Sample too Mected @15 in BVB-15 @15' l occo Soit vapor sample collected @ 20' in SUB-15. 1022 Driller pulling oft brochole 30B-K to SBV-14 1035 Backfilled aw 5.5 bags of Bentonite Moned mig to SUB-14 [05] Unable to collect 2011 vapore 5'653. Point was driven 1104 deep enough but in able to draw any soil vaper. Bentonite is placed on top of sampling hend after tip drinar. Driller gains to 10' bys. Driller @ 10' bos in 8VB-14 //13 reached 10' by sound nearly to vapor sample. //2/ collected sample e 10' by 5 8VB-14. //zz Collected sail inger sample e 20' by 5 in 2VE-19 1/53 Driller momed to bonehole location SUB-13 - last hale for the day. Will do last tous holes to marrow. 1223 Backfilled bretole w stags of bentonite (SUB.14) Began drillis e 50B-13 1238 Collected Soil vagor sample @ 5'bgs at SVB-13

Collecting soil samples e flas borelete and duplicate vapor

sawfle.

**URS** 

OVO		SHEET Z OF Z
PROJECT A Phillips Soi Gapter SUBJECT Warmland Square C Mail	PROJECT NO. 25	
SUBJECT Maryland Square	BY_&Ball	DATE 3-19-07
c mail '	REVIEWED BY	DATE
1225 Secar rep. left site we drill last two bi	and said he'd be be	ack tomorrow when
1254 Collected soil samples	CB' 678@ SVB-13	?-8
1708 Collected soil vajor 50 50B-13-10.5 635	numbe and duple	ireat sample from
1325 collected two soil &	augles form 30B.	13
1393 Collected soil vapor =	ample form 20'b	95 in 8 VB-13
1349 Sampling completed	In the day.	
Barchole SVB-13 bac	exfilled with 5 ba	gs bentonite.
- Holly is finishing equi	ip. take down ans	Silling in Coc,
- Driller cleaning up	drill vigara a	and packing up
- Driller cleaning up equip. Other drill	for went back of	o concrete in
the boreholes. Dr		
- Holly labeled drum	s of soil so they	could be taken
- Holly labeled drums by the driller to o 1436 Holly off site to go	back to office a	and then take
vapor samples to	Feder for shipmen	to analytical
- Drillers had finish and moning soil de	ed filling in borchde	s with concrete
to the Maryland & a while to make.	guare site. I s	taged at site for
	sure comencia ur	as nam ocone
1525 Drillers foot the d	Land L. W. Mar	Jan Same
1525 Drillers Foot the d 1536 One driller is back	to pock of the rest	of the course
1843 Driller of site. I	stand till conc	nete was leard
on bone have -	•	
1448 Left site.	-14/ 14	
	Alball .	

URS SHEET /OF \_\_\_ PROJECT Al Phillips Maryland Sy. PROJECT NO. 200987-24

SUBJECT Soil Vapor sampling BY 5 Ball DATE 3-20-07

REVIEWED BY DATE ' Signal moster set up comes to get and blocked oft Driver arrived on site. 0645 0652 Healf HES meeting with frillers and NDEP. 0700 Driller set up n barehole SVB-12 0708 Began drilling @SVB-12 0715 Collected soil vapor sample es'255 in =12. 0723 Drilled to bottom of SVB-2812 and got vapor lock on the sampler. public out of their hole and will go to next sample location 8VB-11. 0888 Drilling folding up to more. Holly cheang equipmed 08 I O mony to next bonehole. Driller and UKS moved to next and last location. Many and Sinishing minor pickup at SVB-12 0830 Began drilling @ SVB-11 1838 Not able to collect soil vapor sample @ 5' bgs in SVB-11 0852 Secon arrived on site. collected sample @ 10' bs in 8VB-11 as well as displicate vapor sample seen took one displicat as well. 0905 Collected soil vapor sample @ 15' bgs in 848-11. 3toped drilling to avoid encountaring grandwater. Begun to cleanup and heave site. 0926 Both NOTE and Secon off sole. Driller completing 0956 backfill of bricholes. Scott Ball left site. Holly remained to oversee drillers on briefeld completion and cleanup. Subull Filled outcocs 1020 drillers Airiohad, left site. WAIKed over bore holes. 1105 1106 left site w/ drillers to former AI Phillips STR

1202 left site, holes dry Holly Woodward

Pricked up soil sample for Voc analysis of

dropped off soil drums (drillers)

former Site

1120

### APPENDIX B – PHOTOGRAPHS OF FIELD ACTIVITIES



**Client Name:** 

Al Phillips The Cleaner

Site Location: Off-site Soil Vapor Assessment

at The Boulevard Mall and Residential Area

**Project No.** 26698724

#### Photo No. 1

#### Location of Photo:

Borehole SVB-11 on east side of the parking lot at The Boulevard Mall.

## View Direction of Photo:

Facing north.

#### **Description:**

Track-mounted hollow stem auger drill rig located at the east side of the parking lot on the east side of The Boulevard Mall. Shows marking of borehole location and 55-gallon DOT-approved drum for soil tailings prior to drilling of borehole. Residential area is located to the right in photo.



#### Photo No. 2

#### **Location of Photo:**

Borehole SVB-16 on east side of the parking lot at The Boulevard Mall.

### View Direction of Photo:

Facing north.

#### Description:

Located at the east side of the parking lot on the east side of The Boulevard Mall. Shows utility markings by USA Locate, safety cones, URS company truck, and drillers equipment trailer. To the far north is a parking garage for The Boulevard Mall. Residential area is located to the right in photo.





**Client Name:** 

Al Phillips The Cleaner

**Site Location:** Off-site Soil Vapor Assessment at The Boulevard Mall and Residential Area

Project No.

26698724

#### Photo No. 3

#### **Location of Photo:**

Borehole SVB-14 on east side of the parking lot at The Boulevard Mall

## View Direction of Photo:

Facing northeast.

#### **Description:**

Track-mounted hollow stem auger drill rig drilling soil vapor borehole. Assembled soil vapor drive rod with retractable probe and rotary drive hammer on ground on southwest side of URS company truck. Residential area in background.



#### Photo No. 4

#### **Location of Photo:**

Borehole SVB-07 at west end of Ottawa Drive.

## View Direction of Photo:

Facing southwest.

#### **Description:**

Assembling soil vapor drive rod with retractable probe.





#### Client Name:

Al Phillips The Cleaner

Site Location: Off-site Soil Vapor Assessment

at The Boulevard Mall and Residential Area

Project No.

26698724

#### Photo No. 5

#### **Location of Photo:**

Borehole SVB-06 located on northbound Spencer Street.

## View Direction of Photo:

Facing south.

#### **Description:**

Hollow stem auger disengaged from track-mounted drill rig. Soil vapor drive rod with retractable probe is inserted into hollow stem of auger and driven into soil using a rotary drive hammer. Bentonite slurry seal is in bucket.



#### Photo No. 6

#### **Location of Photo:**

Borehole SVB-02 located on northbound Spencer Street.

## View Direction of Photo:

Facing southwest.

#### **Description:**

Soil vapor drive rod located inside hollow stem of auger. Drillers are pouring 1 to 2-feet of bentonite slurry into hollow stem of auger to form a seal around drive rod at soil surface inside hollow stem of auger.





Client Name:

Al Phillips The Cleaner

Site Location: Off-site Soil Vapor Assessment

at The Boulevard Mall and Residential Area

**Project No.** 26698724

#### Photo No. 7

#### **Location of Photo:**

Borehole SVB-09 located on Ottawa Drive.

## View Direction of Photo:

Facing the ground.

#### **Description:**

The disposable 60-cc sampling syringe and tedlar soil vapor sample bag are attached to the disposable sample tubing via a 3-way valve to minimize the risk of introducing ambient air into the tedlar sample bag.



#### Photo No. 8

#### **Location of Photo:**

Borehole SVB-14 on east side of the parking lot at The Boulevard Mall

## View Direction of Photo:

Facing northwest.

#### Description:

Soil vapor sample is being collected from Borehole SVB-14 by URS.





**Client Name:** 

Al Phillips The Cleaner

Site Location: Off-site Soil Vapor Assessment

at The Boulevard Mall and Residential Area

**Project No.** 26698724

#### Photo No. 9

#### **Location of Photo:**

Borehole SVB-14 on east side of the parking lot at The Boulevard Mall

### View Direction of Photo:

Facing down.

#### **Description:**

Soil vapor samples are placed in cardboard box to protect samples from direct sunlight prior to arrival at the analytical laboratory.



#### Photo No. 10

#### **Location of Photo:**

Borehole SVB-08 located at the west end of Ottawa Drive.

## View Direction of Photo:

Facing east.

#### **Description:**

Drillers are cleaning drilling site and preparing soil vapor borehole to be backfilled with hydrated bentonite pellets and concrete surface seal. Track-mounted drill rig is being prepared to advance to location of successive soil vapor borehole.



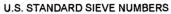
## APPENDIX C – CHAIN-OF-CUSTODY FORMS AND ANALYITICAL RESULTS

## *Ninyo* & Moore

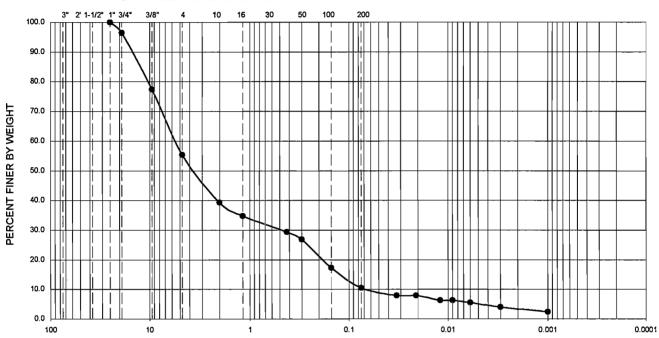
### MOISTURE - DENSITY TEST DATA (ASTM D 2937-04)

	<b>Y</b>		7						Page No. 1
		Project Name:		URS		Project No.:	302009001	Technician: BSS	Date: 04/07
		Sample Location	SUB-05	SUB-05	SUB-09	SUB-09			
		Sample Depth (ft)		10	3	8			
V	/isual Soil Top		SC	GL	CL	GM			
Cla	assification	Bottom	SC	CL	CL	GM			
	Torvane Shear (tsf)								
	Pock	et Penetrometer (tsf)							
	Weight of Moist Soil + Rings (g)		505.5	801.7	1056.6	927.8			
	Number of Rings		3	5	6	5			
ည	Weight of Rings (g)		123.7	200.4	248.7	209.6			
WEIGHTS	Weight of Moist Soil (g)		381.8	601.3	807.9	718.2			
		Dish Number	75	33	DRK	76			
≥	Weight of	Moist Soil + Tare (g)	574.6	803.4	1023.3	937.3			
	Weight	of Dry Soil + Tare (g)	538.7	606.4	923.0	908.0			
		Weight of Tare (g)	199.6	205.6	222.4	222.4			
		Wet Density (pcf)	105.4	99.6	111.5	119.0			
TS		Moisture Content (%)	10.6	49.2	14.3	4.3			
RESUL	Dry Density (pcf)		95.3	66.8	97.6	114.1			
<b>W</b>	Degree of Saturation (%)		38.2	88.3	54.7	25.2			
_		Remarks							

GRA	GRAVEL SAND				FINES		
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY	



#### **HYDROMETER**



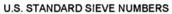
#### **GRAIN SIZE IN MILLIMETERS**

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	Cu	C <sub>c</sub>	Passing No. 200 (%)	u.s.c.s
•	SUB-09- 08						•	•	-	÷	11	GM

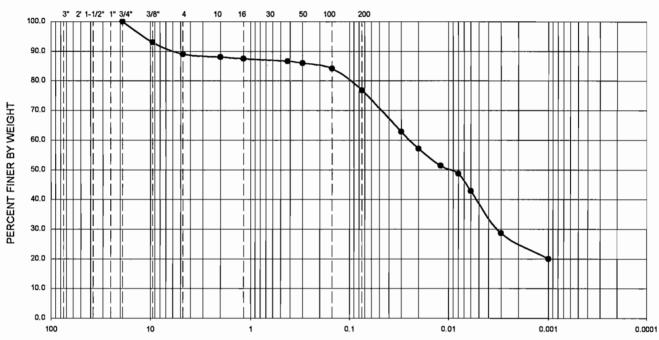
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

<i>Ninyo</i> «	Waare	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	URS	
302009001	4/07	LV, NV	

GRAVEL SAND				D	FINES		
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY	



#### **HYDROMETER**



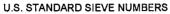
#### **GRAIN SIZE IN MILLIMETERS**

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	C³	C <sub>c</sub>	Passing No. 200 (%)	U.S.C.S
•	SUB-05- 10		1				-	•		1	77	CL

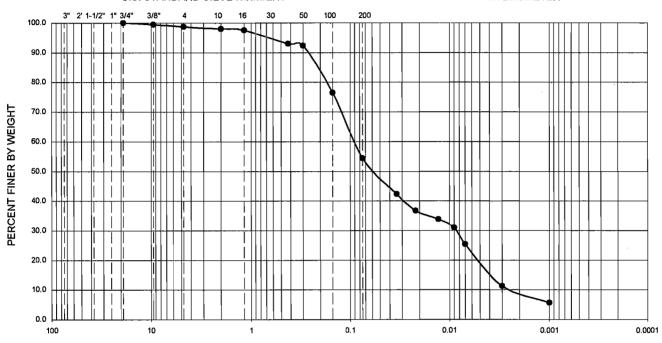
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

<b>Ninyo</b> «	Woore	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	URS	
302009001	4/07	LV, NV	

GRA'	VEL.		SAN	D		FINES
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



#### HYDROMETER



#### **GRAIN SIZE IN MILLIMETERS**

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	٥	O	Passing No. 200 (%)	U.S.C.S
•	SUB-09- 03							1	~~		54	CL

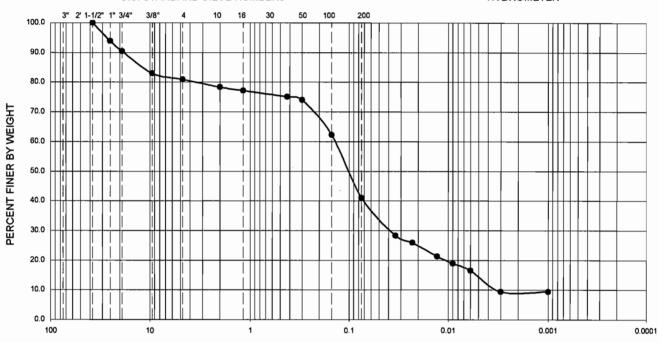
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

Minyo «	Woore	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	URS	
302009001	4/07	LV, NV	

GRAV	/EL		SAN	D		FINES
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



#### **HYDROMETER**



#### **GRAIN SIZE IN MILLIMETERS**

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	Ca	Cc	Passing No. 200 (%)	U.S.C.S
•	SUB-05- 5.5					1	1	-	1	1	41	sc

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

<b>Ninyo</b> «	Waare	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	URS	
302009001	4/07	LV, NV	

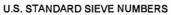
# *Ninyo* & Moore

# MOISTURE - DENSITY TEST DATA (ASTM D 2937-04)

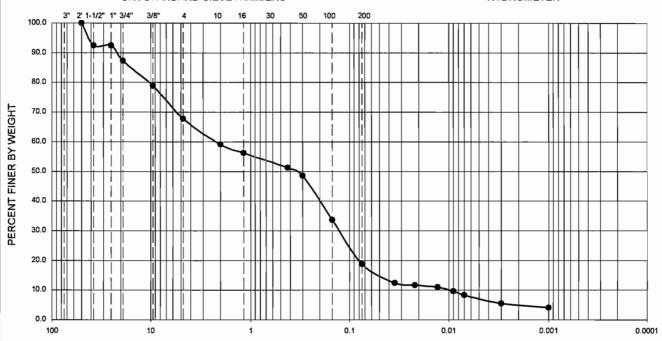
Page No. 4

	•		•							Page No.	
		Project Name:		URS	Project No.:	30200	9001	Technician:	BSS	Date:	04/07
		Sample Location	SVB-13	SVB-13							
		Sample Depth (ft)	8.8	18.5							
\	/isual Soil	Тор	SM	CL							
CI	assification	Bottom	SM	SM							
		Torvane Shear (tsf)									
	Pock	et Penetrometer (tsf)									
	Weight of	Moist Soil + Rings (g)	944.1	1066.8							
		Number of Rings	5	6							
S	Weight of Rings (g)		228.5	276.2							
돘	w	eight of Moist Soil (g)	715.6	790.6							
WEIGHTS		Dish Number	20	203							
8	Weight of	f Moist Soil + Tare (g)	1085.2	1122.6							
	Weight	of Dry Soil + Tare (g)	1038.3	936.9							
		Weight of Tare (g)	348.1	339.2							
		Wet Density (pcf)	118.5	109.1						i	
LTS		Moisture Content (%)	6.8	31.1							
RESUL		Dry Density (pcf)	111.0	83.3					_		
RE	Deg	ree of Saturation (%)	36.8	83.6				·			
_		Remarks									

GRA\	/EL		SAND FINES				
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY	



#### **HYDROMETER**



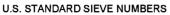
#### **GRAIN SIZE IN MILLIMETERS**

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	Cu	Cc	Passing No. 200 (%)	U.S.C.S
•	SVB-13- 8.5					1			-		19	SM

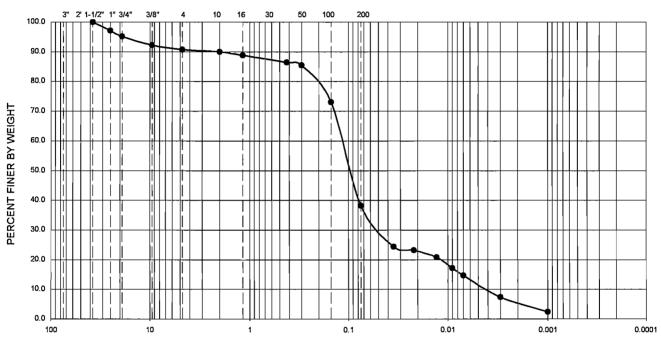
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

Ninyo	Woore	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	URS	
302009001	4/07	LV, NV	

GRA\	/EL		SAN	D		FINES
Coarse	Fine	Coarse	Medium	Fine	SILT	CLAY



#### **HYDROMETER**



#### **GRAIN SIZE IN MILLIMETERS**

Symbol	Sample Location	Depth (ft)	Liquid Limit	Plastic Limit	Plasticity Index	D <sub>10</sub>	D <sub>30</sub>	D <sub>60</sub>	Ca	C <sub>c</sub>	Passing No. 200 (%)	U.S.C.S
•	SVB-13- 8.5					1					38	sc

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 422-63 (02)

<b>Ninyo</b> «	Woore	GRADATION TEST RESULTS	FIGURE
PROJECT NO.	DATE	URS	
302009001	4/07	LV, NV	

# **Ninyo**<sup>∞</sup>**Moore** CHAIN OF CUSTODY RECORD

Date: 3.9.07 Page: 1 of

6700 Paradise Road, Suite E Las Vegas, Nevada 89119 (702) 433-0330 phone (702) 433-0707 fax

Project Name: AP~MS.	Project No.: 26698724	Laboratory Name: Ninyo & Moore	Laboratory Address
Client Name:	Project Manager:	Laboratory Phone:	6700 Paradise Road, Suite E
لا . ۲۰۵	LISA LOWE	(702) 433-0330	Las Vegas, Nevada 89119
Method:	Fax Results to: 492-9149.		
ampler Name:	Sampler Signature:		Turnaround Time:
LISA LOWE	4913		

Sample No.	Ninyo & Moore Lab ID#	Client Sample ID#	Sample Location (Depth/Road Surface Type	Sampling Date	Sampling Time	Matrix: (Soil, Asphalt, Mix, Aggregates)	Moisture Content	No. of Containers	Comments
1		·	518-05- 5.5R	3.7.07				1	TEST PER ATTACHED SPEZS
2			· · · · · · · · · · · · · · · · · · ·	1				1	
3			51B.09-03R				·····	1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
4			, , , T					1	
5			SVB-05 - 10 R			:		. 1	
6			· - · T	<u> </u>				1	
7			SUB - 09 -08 R					1	
8				1-1-				1 .	
9									
10									

Relinquished by: (Signature)	Date & Time	Received by: (Signature)	Date & Time:		
(No P	3.9.07 3.25pm	Jel L Galfal	3.9.07 3.25pm.		
		e of			

# Ninyo & Moore CHAIN OF CUSTODY RECORD

THAIN OF CUSTODY RECORD

Date: 2-19-07 Page: 1 of 1

6700 Paradise Road, Suite E Las Vegas, Nevada 89119 (702) 433-0330 phone (702) 433-0707 fax

Project Name:	Project No.: 26698724	Laboratory Name: Ninyo & Moore	Laboratory Address
Client Name:	Project Manager:	Laboratory Phone:	6700 Paradise Road, Suite E Las Vegas, Nevada 89119
URS	Scott Ball	(702) 433-0330	Las vegas, Nevada 69119
Method:	Fax Results to: 702-9149		
Sampler Name:	Sampler Signature:		Turnaround Time:
Hollywoodward	Holly woodwal		

Sample No.	Ninyo & Moore Lab ID#	Client Sample ID#	Sample Location (Depth/Road Surface Type	Sampling Date	Sampling Time	Matrix : (Soil, Asphalt, Mix, Aggregates)	Moisture Content	No. of Containers	Comments
1			SUB 13-8.5.T	3/1910)	1254	D 4	22.		1954 per att specs
2			SVR-13- 95-R	ì	1254	ا سا	22_		,
3			5VB-13-18.5 T		13.25	D =	211		
4			51B-13-185 R	<u> </u>	1325	2			
5				:			27		
6						0		[	
7	_					D 8<	И		
8							1		,
9									
10									

Relinquished by: (Signature)	Date & Time	Received by (Signature)	Date & Time:		
Holle Woodward	3-19-07 420PM	Il after N+M	3-19-07 4 <sup>20</sup> pm		
			·		
_					



14 March 2007

Ms. Lisa Lowe URS - Las Vegas

811 Grier Dr.

Las Vegas, NV 89119

RE: UR030707-10

Enclosed are the results of analyses for samples received by the laboratory on 07-Mar-07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.



Project: UR030707-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

s Reported: 14-Mar-07

Project Manager: Ms. Lisa Lowe

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Frip Blank	E703019-01	Vapor	06-Mar-07	07-Mar-07
SVB-01-05, P400cc	E703019-02	Vapor	06-Mar-07	07-Mar-07
SVB-02-04, P400cc	E703019-03	Vapor	06-Mar-07	07-Mar-07
SVB-02-10, P400cc	E703019-04	Vapor	06-Mar-07	07-Mar-07
SVB-03-05, P400cc	E703019-05	Vapor	06-Mar-07	07-Mar-07
SVB-03-12, P400cc	E703019-06	Vapor	06-Mar-07	07-Mar-07
SVB-04-05, P400cc	E703019-07	Vapor	06-Mar-07	07-Mar-07
SVB-04-12, P400cc	E703019-08	Vapor	06-Mar-07	07-Mar-07



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (E703019-01) Vapor	Sampled: 06-Mar-07	Received:	07-Mar-0	7					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	n	н	n	н	11	U	
Vinyl chloride	ND	0.1	и	и	la la	н	11	v	
Chloroethane	ND	0.5	•	<b>a</b> l	И	Ħ	"	4	
Trichlorofluoromethane	ND	0.5	H	Pt .	И	н	11	p.	
Methylene chloride	ND	0.5	H	n n	H	H	•		
trans-1,2-Dichloroethene	ND	0.5	и	D	п	"		и	
1,1-Dichloroethane	ND	0.5	u	**	II	4	Į4	И	
1,1-Dichloroethene	ND	0.5	n	0	ш	P		н	
cis-1,2-Dichloroethene	ND	0.5	v	11	11	4	и	lt	
Chloroform	ND	0.1	"	0	н	1)	ji	н	
1,1,1-Trichloroethane	ND	0.5	u	u	н	D	и	н	
Carbon tetrachloride	ND	0.1	11	19	н	U	н	н	
1,2-Dichloroethane	ND	0.1	0	Į4	н	0	II	н	
Benzene	0.1	0.1	11	Į#	H	u	ļŧ	n	В
Trichloroethene	ND	0.5	и	и	n	v	И	н	
Toluene	ND	1.0	и	и	p)	10	н	н	
1,1,2-Trichloroethane	ND	0.5	Н	н	11	11	н	п	
Tetrachloroethene	ND	0.1	И	H	III	v	н	и	
Ethylbenzene	ND	0.5	и	п	u	17	И	N	
1,1,1,2-Tetrachloroethane	ND	0.5	н	li	0		н	п	
m.p-Xylene	ND	1.0	H	н	•	4	ıı		
o-Xylene	ND	1.0	11	н	v	a	п	ar .	
1,1,2,2-Tetrachloroethane	ND	0.5	n	n	v	11	н	e	
Freon 113	ND	0.5	n 	**	v	40	II	Đ.	. =
Surrogate: Dibromofluoromethane	,	105 %	75-1	25	,,	μ	"	"	
Surrogate: 1,2-Dichloroethane-d4		112 %	75-1		"	"	#	**	
Surrogate: Toluene-d8		113 %	75-1		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	75-1		п	"	"	,,	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-01-05, P400cc (E703019-02) Vapor	Sampled: 06	-Mar-07 Re	ceived: 0	7-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	Н	п	v	и		ч	
Vinyl chloride	ND	0.1	н	Ш	0	н	н	et	
Chloroethane	ND	0.5	н	н	11	H	n,	et.	
Trichlorofluoromethane	ND	0.5	н	H			P	B.	
Methylene chloride	ND	0.5	п	Ш	9	н	**	st.	
trans-1,2-Dichloroethene	ND	0.5	н	н	v			·	
1,1-Dichloroethane	ND	0.5	п	н		н	u,	W	
1,1-Dichloroethene	ND	0.5	н	Ш	11	н		•	
cis-1,2-Dichloroethene	ND	0.5	н	н	11	н	D	•	
Chloroform	ND	0.1	н	п	11	н		w	
1,1,1-Trichloroethane	ND	0.5	н	н	**	н	D	0	
Carbon tetrachloride	ND	0.1	н	H	11	н	n,	4	
1,2-Dichloroethane	ND	0.1	н	4	4	Į4		w	
Benzene	ND	0.1	M	,,	•			u	
Trichloroethene	ND	0.5	H	н	0	И	47	0	
Toluene	ND	1.0	н	н		п	19	44	
1,1,2-Trichloroethane	ND	0.5	"	н			•	u	
Tetrachloroethene	2.5	0.1	H	rl		n	v	ur .	
Ethylbenzene	ND	1.0	н	н	•	н	0	nt .	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н		П	9	•	
m,p-Xylene	ND	1.0	4	н		11	u	4	
o-Xylene	ND	1.0		и	41	п	11	u	
1,1,2,2-Tetrachloroethane	ND	0.5	n	øl	11	11	It	v	
Freon 113	ND	0.5	И	*1	14	п	14	0	
Surrogate: Dibromofluoromethane		106 %	75-	125	n	"	n	п	
Surrogate: 1,2-Dichloroethane-d4		112 %	75-	125	"	**	n	n	
Surrogate: Toluene-d8		110 %	75-	125	"	"	n	n	
Surrogate: 4-Bromofluorobenzene		93.2 %	75-	125	"	"	"	n	



Project: UR030707-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-02-04, P400cc (E703019-03) Vapor	Sampled: 06	-Mar-07 Re	ceived: 0	7-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	п	н	w	11	N	н	
Vinyl chloride	ND	0.1	н	II	**	41		ч	
Chloroethane	ND	0.5	Ħ	ш	III	11	u.	p)	
Trichlorofluoromethanc	ND	0.5	н	rl	at .	11	u-	I)	
Methylene chloride	ND	0.5	Ħ	н	1)	11	U	D.	
trans-1,2-Dichloroethene	ND	0.5	4	4	4	и		**	
1,1-Dichloroethane	ND	0.5	H,	Dr.		n	w	0	
1,1-Dichloroethene	ND	0.5	v		lt	П	0	"	
cis-1,2-Dichloroethene	ND	0.5	v		44	н	11		
Chloroform	0.2	0.1	0	11	p.	ч	11	11	
1,1,1-Trichloroethane	ND	0.5	41	4	μ	n	19	lt .	
Carbon tetrachloride	ND	0.1	11	17	lt.	н	11	μ	
1,2-Dichloroethane	ND	0.1	la .	10	н	H	10	μ	
Benzene	ND	0.1	14	11	H	11	11	lı	
Trichloroethene	ND	0.5	Į4	11		11	le .	и	
Toluene	ND	1.0	н	н	11	0	н	Į.	
1,1,2-Trichloroethane	ND	0.5	ls .	lt	П	11	н	11	
Tetrachloroethene	3.0	0.1	н	И	н	11	ш	ıı	
Ethylbenzene	ND	1.0	И	н		и	ri	п	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н		16	н	ų	
m,p-Xylene	ND	1.0	н	н	•	И	D.	н	
o-Xylene	ND	1.0	н	н	11	ш	ur .	11	
1,1,2,2-Tetrachloroethane	ND	0.5		n	la .	Ш	ь	ч	
Freon 113	ND	0.5	al .	н	н	н		<u> </u>	
Surrogate: Dibromofluoromethane		109 %	75-	125	71	"	"	u	
Surrogate: 1,2-Dichloroethane-d4		113 %		125	n	**	,,	"	
Surrogate: Toluene-d8		109 %		125	"	**	"	n	
Surrogate: 4-Bromofluorobenzene		92.8 %		125	"	"	11	н	



Project: UR030707-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Reported: 14-Mar-07

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

## Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-02-10, P400cc (E703019-04) Vapor	Sampled: 06	6-Mar-07 R	eceived: (	7-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/1	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	ĮI.	11	n	IF	и	и	
Vinyl chloride	ND	0.1			Ħ	*	н	И	
Chloroethane	ND	0.5	и	и	н	0	п	н	
Trichlorofluoromethane	ND	0.5	н	И	Ħ	v	н	п	
Methylene chloride	ND	0.5	н	н	D	11	el .	н	
trans-1,2-Dichloroethene	ND	0.5	H	n		10	н	н	
1,1-Dichloroethane	ND	0.5		н	v	11	н	n	
1,1-Dichloroethene	ND	0.5	11	H	0	ji .	n	н	
cis-1,2-Dichloroethene	ND	0.5	н	H	4	и	ri	н	
Chloroform	ND	0.1	H	"	11	н	н	P	
1,1,1-Trichloroethane	ND	0.5	,	н	И	11		u u	
Carbon tetrachloride	ND	0.1	pl.	н	Į#	н	.,	U	
1,2-Dichloroethane	ND	0.1	4		и	н	47	0	
Benzene	0.2	0.1	P	"	И	н	0	и	В
Trichloroethene	ND	0.5	¥f	0	н	н	v	II.	
Toluene	ND	1.0	•	•	н	н	**	И	
1,1,2-Trichloroethane	ND	0.5	•	v	11	н	14	ļŧ	
Tetrachloroethene	ND	0.1	4	11	II	n	н	н	
Ethylbenzene	ND	1.0	11	II.	н		II	н	
1,1,1,2-Tetrachloroethane	ND	0.5	H	и	M	U	н	H	
m,p-Xylene	ND	1.0		н	И	U	"	н	
o-Xylene	ND	1.0	п	Ш	PI	U	H	н	
1,1,2,2-Tetrachloroethane	ND	0.5	н	н	ul	0	•	n	
Freon 113	ND	0.5	n 		<b>H</b> .			rl 	
Surrogate: Dibromofluoromethane		107 %	75-	-125	,,	n	**	**	
Surrogate: 1,2-Dichloroethane-d4		113 %	75-	-125	<i>n</i>	n	u	"	
Surrogate: Toluene-d8		108 %	<i>75</i> -	-125	п	"	#	,,	
Surrogate: 4-Bromofluorobenzene		95.2 %	75.	-125	#	**	"	п	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-03-05, P400cc (E703019-05) Vapor	Sampled: 06	-Mar-07 Re	ceived: (	7-Mar-07		·			·
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	и	11	H	0	н	И	
Vinyl chloride	ND	0.1	11	ĮI.	н	N)	н	И	
Chloroethane	ND	0.5	Į <b>I</b>	Į.	н	P.	н	н	
Trichlorofluoromethane	ND	0.5	Į <b>I</b>	ĮI.	н	D	н	И	
Methylene chloride	ND	0.5	н			u u	н	н	
trans-1,2-Dichloroethene	ND	0.5	ls	ls.	н	**	н	ls	
1,1-Dichloroethane	ND	0.5	и	и	н	n	н	н	
1,1-Dichloroethene	ND	0.5			"	D	н	H	
cis-1,2-Dichloroethene	ND	0.5	и			"	н	n	
Chloroform	0.1	0.1	и	14	H	9	н	н	
1,1,1-Trichloroethane	ND	0.5	15	р	4	v	н	н	
Carbon tetrachloride	ND	0.1	И	lı	н	v	11	н	
1,2-Dichloroethane	ND	0.1	и	и	11	0	11	н	
Benzene	0.5	0.1	H	H	P	U	н	н	В
Trichloroethene	ND	0.5	н	н	D.	u	н	n	
Toluene	ND	1.0	14	н	H	u	н	H	
1,1,2-Trichloroethane	ND	0.5	н	II	н	41	н	ч	
Tetrachloroethene	46	0.1	ч	11		u	n	n	
Ethylbenzene	ND	1.0	н	II	н	0	н	ч	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н	H	U	н	n,	
m,p-Xylene	ND	1.0	п	н	P	**	"		
o-Xylene	ND	1.0	n	н	"	и	n	el .	
1,1,2,2-Tetrachloroethane	ND	0.5	rl	н	0	И	н	ч	
Freon 113	ND	0.5	H		··· – ···	- · · · · · · · · · · · · · · · · · · ·	n 	<u>"</u>	
Surrogate: Dibromofluoromethane		107 %	75-	125	u	n	"	"	
Surrogate: 1,2-Dichloroethane-d4		114%		125	μ	"	μ	"	
Surrogate: Toluene-d8		113%		125	n	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	75-	125	"	"	"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

## Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-03-12, P400ce (£703019-06) Vapor	Sampled: 06	-Mar-07 Re	eceived: 07	-Маг-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	н	н	*	0	n	II	
Vinyl chloride	ND	0.1	н	н	**	•	п	H	
Chloroethane	ND	0.5	н	ii.		v	н	И	
Trichlorofluoromethane	ND	0.5	н	н		Tr.	н	н	
Methylene chloride	ND	0.5	н	И	N	*	h	n	
trans-1,2-Dichloroethene	ND	0.5	Įt.	ii.	11	n,	н	н	
1,1-Dichlorocthane	ND	0.5	It		D	D	n	н	
1,1-Dichloroethene	ND	0.5	μ	le	н	v	in .	n	
cis-1,2-Dichloroethene	ND	0.5	ĮI.	į.	H	D	н	н	
Chloroform	ND	0.1	и		"	v	п	н	
1,1,1-Trichloroethane	ND	0.5	И	и	11	e	н	II	
Carbon tetrachloride	ND	0.1	Į.	Į.	п	v	н	н	
1,2-Dichloroethane	ND	0.1	и		"	v	п	н	
Benzene	0.2	0.1	н	н	**	11	п	н	В
Trichloroethene	ND	0.5	н	н	4	11	н	н	
Toluene	ND	1.0	и	"	,	v	н	н	
1,1,2-Trichloroethane	ND	0.5	н	н		u	n	и	
Tetrachloroethene	0.8	0.1	н	н	н	0	н	н	
Ethylbenzene	ND	1.0	H	H	н		н	И	
1,1,1,2-Tetrachloroethane	ND	0.5	n	н	n	v	и	μ	
m,p-Xylene	ND	1.0	lt	H	rl	v	и	n	
o-Xylene	ND	1.0	И	н	н	0	н	и	
1,1,2,2-Tetrachloroethane	ND	0.5	н	н	н	0	н	И	
Freon 113	ND	0.5	ļ4		н 			μ	
Surrogate: Dibromofluoromethane		107 %	75-12	25	"	**	n	u	
Surrogate: 1,2-Dichloroethane-d4		116%	75-12		,,	**	"	"	
Surrogate: Toluene-d8		113 %	75-12		"	"	"	u	
Surrogate: 4-Bromofluorobenzene		96.4 %	75-12		"	#	**	n	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

# Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-04-05, P400cc (E703019-07) Vapor	Sampled: 06-	-Mar-07 Re	ceived: 07	'-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5		D	H	н	p.		
Vinyl chloride	ND	0.1	.,	"	11	n	IN .	le .	
Chloroethane	ND	0.5	e	4	II	N	μ	II	
Trichlorofluoromethane	ND	0.5	W.	v	н	n	н	н	
Methylene chloride	ND	0.5	v	v	П	17	le .	н	
trans-1,2-Dichloroethene	ND	0.5	0	0	II	n	н	н	
1,1-Dichloroethane	ND	0.5		4	ц	D	и	n	
1,1-Dichloroethene	ND	0.5	17	11	n	U	14	н	
cis-1,2-Dichloroethene	ND	0.5	11	1•	н	"	н	н	
Chloroform	ND	0.1	11	ĮI.	н	U	H	n	
1,1,1-Trichloroethane	ND	0.5	ĮI.	и	n	U		ri	
Carbon tetrachloride	ND	0.1	и	н	*	0	н	н	
1,2-Dichloroethane	ND	0.1	И	н	P	u	н	н	
Benzene	ND	0.1	н	H	D	U	н	н	
Trichloroethene	ND	0.5	n	н		u	н	н	
Toluene	ND	1.0	н	н	**	0	н	ч	
1,1,2-Trichloroethane	ND	0.5	н	Ш	III	,,	н	η	
Tetrachloroethene	0.4	0.1	н	Ш	· ·	u	н		
Ethylbenzene	ND	1.0	н	н		u	n	al .	
1,1,1,2-Tetrachlorocthanc	ND	0.5	н	н	IF.	11	h	17	
m,p-Xylene	ND	1.0	n	rl	ut.	11	П	n	
o-Xylene	ND	1.0	н	н	· ·	4	II .	D	
1,1,2,2-Tetrachloroethane	ND	0.5	H	,	w	и	11	v	
Freen 113	<u>ND</u>	0.5		н	v	н	п	9	
Surrogate: Dibromofluoromethane		109 %	75-1	25	"	,,	"	"	
Surrogate: 1,2-Dichloroethane-d4		120 %	75-1	25	0	**	"	μ	
Surrogate: Toluene-d8		111 %	75-1	25	n	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	75-1	25	n	"	"	μ	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

# Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Апајугед	Method	Notes
SVB-04-12, P400cc (E703019-08) Vapor	Sampled: 06	-Mar-07 Re	ceived: (	7-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70705	07-Mar-07	07-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	u	9	н	II.	н	14	
Vinyl chloride	ND	0.1	4	11	*1	0	н	н	
Chloroethane	ND	0.5		и	ч	"	n	н	
Trichlorofluoromethane	ND	0.5	le .	н	I)	11	н	п	
Methylene chloride	ND	0.5	н	н	u	lt	н	II .	
trans-1,2-Dichloroethene	ND	0.5	н	н	11	И	D	17	
1,1-Dichloroethane	ND	0.5	H	"	11	н	U	e e	
1,1-Dichloroethene	ND	0.5	"	H	н	н	19	41	
cis-1,2-Dichloroethene	ND	0.5	ur .		н	*	14		
Chloroform	ND	0.1	0	v	Ш	н	и	le .	
1,1,1-Trichloroethane	ND	0.5		"	н	ı	la .	н	
Carbon tetrachloride	ND	0.1	40	11	4	"	н	н	
1,2-Dichloroethane	ND	0.1	и	ļ	и.	0	И	н	
Benzene	ND	0.1	н	ıı	**	11	н	н	
Trichloroethene	ND	0.5		И	D)	ĮI.	м	н	
Toluene	ND	1.0	н	н	D	и	PI .	14	
1,1,2-Trichloroethane	ND	0.5	н	H	v	И	•	U	
Tetrachloroethene	1.0	0.1	н		11	н	U	19	
Ethylbenzene	ND	1.0	n	•	н	н	11	40	
1,1,2-Tetrachloroethane	ND	0.5	w	0	H	"	н	и	
m,p-Xylene	ND	1.0	41	•		11	H	n	
o-Xylene	ND	1.0	4	и	н	11	le .	н	
1,1,2,2-Tetrachloroethane	ND	0.5	la .	ĮI.	н	t)	н	н	
Freon 113	<u>ND</u>	0.5	н —		#I		, , , , , , , , , , , , , , , , , , ,	н	
Surrogate: Dibromofluoromethane		116%	75.	-125	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		119%	75	-125	"	n	"	u	
Surrogate: Toluene-d8		111 %	75	-125	μ	n	"	u	
Surrogate: 4-Bromofluorobenzene		91.6%	75	-125	Ħ	**	"	,,	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030707-10

Project Number: 26698724 / Maryland Square Al Phillips Project Manager: Ms. Lisa Lowe

Spike

Source

Phillips Reported: 14-Mar-07

RPD

%REC

## Volatile Organic Compounds by EPA Method 8260B - Quality Control H&P Mobile Geochemistry

Reporting

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	Limit	Notes
Batch EC70705 - EPA 5030										
Blank (EC70705-BLK1)		<b>.</b> .		Prepared	& Analyze	d: 07-Ma	r-07			
1,1-Difluoroethane (LCC)	ND	10	ug/l							
Dichlorodifluoromethane	ND	0.5	v							
Vinyl chloride	ND	0.1	11							
Chloroethane	ND	0.5	и							
Trichlorofluoromethane	ND	0.5	n							
Methylene chloride	ND	0.5	н							
trans-1,2-Dichlorgethene	ND	0.5	n							
I,1-Dichloroethane	ND	0.5								
1,1-Dichloroethene	ND	0.5	P							
cis-1,2-Dichloroethene	ND	0.5	(1							
Chloroform	ND	0.1	1.							
1,1,1-Trichloroethane	ND	0.5	и							
Carbon tetrachloride	ND	0.1	н							
1,2-Dichloroethane	ND	0.1	п							
Benzene	0.14	0.1	#I							
Frichloroethene	ND	0.5	B							
Toluene	ND	1.0	u,							
1,1,2-Trichloroethane	ND	0.5	"							
Tetrachloroethene	ND	0.1	H							
Ethylbenzene	ND	1.0	н							
1,1,1,2-Tetrachloroethane	ND	0.5	"							
m,p-Xylene	ND	1.0	"							
o-Xylene	ND	1.0	.,							
1,1,2,2-Tetrachloroethane	ND	0.5								
Freon 113	ND_	0.5								
Surrogate: Dibromofluoromethane	2.57		n	2.50		103	75-125			
Surrogate: 1,2-Dichloroethane-d4	2.62		"	2.50		105	75-125			
Surrogate: Toluene-d8	2.77		**	2.50		111	75-125			
Surrogate: 4-Bromofluorobenzene	2.46		"	2.50		98.4	75-125			

# MOBILE GEOCHEMISTRY

# **Chain of Custody Record**

2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

rate: 2 - 6 - 0 7	
8P Project # 0420 5070 7-10	
outside Lab:	

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*Signature constitutes authorization to	proceed with analysis and accer	plance of co	ondition on	back.	Sample o	disposal in <b>st</b> ruc	tion:		 	sposal	@ <b>\$</b> 2. <b>0</b>	0 each			Return	to clier	rt		Picku	0	'		_	



14 March 2007

Ms. Lisa Lowe URS - Las Vegas 811 Grier Dr. Las Vegas, NV 89119

RE: UR030807-10

Enclosed are the results of analyses for samples received by the laboratory on 08-Mar-07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Janis Villarreal

Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.



Project: UR030807-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119 Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### ANALYTICAL REPORT FOR SAMPLES

Sample 1D	Laboratory ID	Matrix	Date Sampled	Date Received
Field Blank (SVB-07), P400cc	E703027-01	Vapor	07-Mar-07	08-Mar-07
SVB-07-05, P400cc	E703027-02	Vapor	07-Mar-07	08-Mar-07
SVB-08-05, P400cc	E703027-03	Vapor	07-Mar-07	08-Mar-07
SVB-08-10, P400cc	E703027-04	Vapor	07-Mar-07	08-Mar-07
SVB-08-910, P400cc	E703027-05	Vapor	07-Mar-07	08-Mar-07
SVB-09-05, P400cc	E703027-06	Vapor	07-Mar-07	08-Mar-07
SVB-09-10, P400cc	E703027-07	Vapor	07-Mar-07	08-Mar-07
SVB-10-05, P400cc	E703027-08	Vapor	07-Mar-07	08-Mar-07
SVB-10-10, P400cc	E703027-09	Vapor	07-Mar-07	08-Mar-07
SVB-05-08, P400cc	E703027-10	Vapor	07-Mar-07	08-Mar-07
SVB-05-98, P400cc	E703027-11	Vapor	07-Mar-07	08-Mar-07
SVB-05-13, P400cc	E703027-12	Vapor	07-Mar-07	08-Mar-07
SVB-06-08, P400cc	E703027-13	Vapor	07-Mar-07	08-Mar-07
SVB-06-12, P400cc	E703027-14	Vapor	07-Mar-07	08-Mar-07



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Field Blank (SVB-07), P400cc (E703027-	01) Vapor	Sampled: 07-M	1ar-07	Received:	08-Mar-07	,			
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5		Ħ	и	П	10	P	
Vinyl chloride	ND	0.1	Ħ	н	14	Ч	а	P	
Chloroethane	ND	0.5	•	н	11	n	11	v	
Trichlorofluoromethane	ND	0.5		н	44	н	14	ņ	
Methylene chloride	ND	0.5	w	•	И	н		п	
trans-1,2-Dichloroethene	ND	0.5	•	v	и	Pr	и	lt	
1,1-Dichloroethane	ND	0.5		v	n	**	И	μ	
1,1-Dichloroethene	ND	0.5	10	4	II	D	Į4	u	
eis-1,2-Dichloroethene	ND	0.5	1=	11	н		ıı	и	
Chloroform	ND	0.1	11	и	H	0	н	н	
1,1,1-Trichloroethane	ND	0.5	19	lt	N	41	H	н	
Carbon tetrachloride	ND	0.1	И	ļ		11	п	н	
1,2-Dichloroethane	ND	0.1	н	И		**	н	н	
Benzene	ND	0.1	н	n	v	И	н	ч	
Trichloroethene	ND	0.5	ш	Ш	•	н	•	п	
Toluene	ND	1.0	п	Ш	4	н	н	п	
1,1,2-Trichloroethane	ND	0.5	н	Ħ	u	n	Ħ	н	
Tetrachloroethene	ND	0.1	71	"	11	н	N	И	
Ethylbenzene	ND	1.0	PI	rl	já.	н	D	D.	
1,1,1,2-Tetrachlorocthane	ND	0.5	н	N	H	п		w	
m,p-Xylene	ND	1.0	10	11	и	II .	w	e	
o-Xylene	ND	1.0	•	H-	и	н	0	10	
1,1,2,2-Tetrachloroethane	ND	0.5	17	•	Н	н	41	II .	
Freon 113	ND	0.5	et .	•	н	n			
Surrogate: Dibromofluoromethane		117%	7.	5-125	"	"	11	n	
Surrogate: Toluene-d8		102 %	7.	5-125	"	**	<i>}</i> *	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	7.	5-125	**	"	**	μ	



Project: UR030807-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

Reported: 14-Mar-07

Project Manager: Ms. Lisa Lowe

# Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Ртерагед	Analyzed	Method	Notes
SVB-07-05, P400cc (E703027-02) Vapor	Sampled: 07	-Mar-07 R	eceived:	08-Mar-07					
1,1-Difluoroethane (LCC)	25	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	.,	"	п	"	11	п	
Vinyl chloride	ND	0.1	•	v	П	н	II.	ļi.	
Chloroethane	ND	0.5	•		н	II.	ĮI.	μ	
Trichlorofluoromethane	ND	0.5	v	u	l4	"	и		
Methylene chloride	ND	0.5	v	v	14	H	и	И	
trans-1,2-Dichloroethene	ND	0.5	•	0	И	n	ĮI.	11	
1,1-Dichloroethane	ND	0.5	"	v	14	n			
1,1-Dichloroethene	ND	0.5		U	п	"	"	lu .	
cis-1,2-Dichloroethene	ND	0.5	10	9	П	H	11	Į.	
Chloroform	0.2	0.1	•	11	н	n	Į.	ļ	В
1,1,1-Trichlorocthane	ND	0.5	4	11	n	P		u	
Carbon tetrachloride	ND	0.1	**	17		u u	lt.	И	
1,2-Dichloroethane	0.3	0.1	10	÷10	н	*	и	И	
Benzene	ND	0.1	**	41	н		И	μ	
Trichloroethene	ND	0.5	ĮI.	11	Ŋ	D	и	u u	
Toluene	ND	1.0		11	n	v	и	и	
1,1,2-Trichloroethane	ND	0.5	11	11	Ħ	*	и	И	
Tetrachloroethene	11	0.1	je .	j <b>a</b>	H	n,	Н	И	
Ethylbenzene	ND	1.0	Į4	II.		U	H	н	
1, 1, 1, 2-Tetrachloroethane	ND	0.5	и	и	Ħ	v	п	н	
m,p-Xylene	ND	1.0	И	И	н	0	п	н	
o-Xylene	ND	1.0	je	н	н	v	п	n	
1,1,2,2-Tetrachloroethane	ND	0.5	и	И	и	v	п	n	
Freon 113	ND	0.5	и	н	н	ø	14	н	
Surrogate: Dibromofluoromethane		124 %	7 <b>5</b>	-125	**	17	tt	**	
Surrogate: Toluene-d8		100 %	75	-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	7 <b>5</b>	-125	"	n	"	"	



Project: UR030807-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Project Manager: Ms. Lisa Lowe

Aπalyte	Result	Reporting Limi	•	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-08-05, P400cc (E703027-03) Vapor	Sampled: 07	-Mar-07	Received:	08-Mar-07					
1,1-Difluoroethanc (LCC)	ND	10	) ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	5 "	H	И	II	•	el .	
Vinyl chloride	ND	0.1	"	4	Į <b>i</b>	И	41	ч	
Chloroethane	ND	0.5	5 "	"		ıı		ч	
Trichlorofluoromethane	ND	0.5	, "	11	le .	I	P1	п	
Methylene chloride	ND	0.5	5 "	H	11	И	N	pl	
trans-1,2-Dichloroethene	ND	0.5	· "	"	4	н	4	н	
1,1-Dichloroethane	ND	0.5	"	н	v	n	PI	n	
1,1-Dichloroethene	ND	0.5	, "	н	u	lı	н	n	
cis-1,2-Dichloroethene	ND	0.5	"	н	0	и	н	н	
Chloroform	ND	0.1	н	н	"	И	н	П	
1,1,1-Trichloroethane	ND	0.5	"	н	u	и	н	н	
Carbon tetrachloride	ND	0.1	н	Ħ	"	ıı	н	н	
1.2-Dichloroethane	ND	0.1	н	п	ч	и	н	n	
Benzene	ND	0.1	н	9	ų	Į.	н	н	
Trichloroethene	ND	0.5	5 "	н	и	11	0	н	
Toluene	ND	1.0	) "	п	н	11	н	n	
1,1,2-Trichloroethane	ND	0.5	j "	п	n	11	П	п	
Tetrachloroethene	2.7	0.1	н	н	и	11	0	н	
Ethylbenzene	ND	1.0	"	п	н	11	п	ri	
1,1,1,2-Tetrachloroethane	ND	0.5	j "	н	н	11	н	н	
m,p-Xylene	ND	1.0	) "	n	H	и	н	н	
o-Xylene	ND	1.0	) "	н	ri .	11	n	n	
1,1,2,2-Tetrachloroethane	ND	0.5	) H	н	•	II	н	н	
Freon 113	ND	0.5		н			н		
Surrogate: Dibromofluoromethane		106 %	6 <i>75</i>	-125	"	"	"	n	
Surrogate: Toluene-d8		103 %	6 75	-125	"	"	"	n	
Surrogate: 4-Bromofluorobenzene		93.6 %	ó 75	-125	#	н	"	n	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-08-10, P400cc (E703027-04) Vapor	Sampled: 07	-Mar-07 R	teceived: (	08-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	11	11	H	Ŋ	и	17	
Vinyl chloride	ND	0.1	16	41	н	Ŋ	ľ	11	
Chloroethane	ND	0.5	11	4	"	"		la	
Trichlorofluoromethane	ND	0.5				"	lt.	19	
Methylene chloride	ND	0.5	и	la .	H	0	н	10	
trans-1,2-Dichloroethene	ND	0.5	lt	И	н	n	н	11	
1,1-Dichloroethane	ND	0.5	и	н		v	н	11	
1,1-Dichloroethene	ND	0.5	н	н		v	н	la .	
cis-1,2-Dichloroethene	ND	0.5	n	In	•†	4	п	14	
Chloroform	0.2	0.1	н	н	D	11	н	н	В
1,1,1-Trichloroethane	ND	0.5	н	и	ur .	11	н	П	
Carbon tetrachloride	ND	0.1	н	н	•	ji .	4	н	
1,2-Dichloroethane	ND	0.1	п	н	u	и		11	
Benzene	0.1	0.1	н	11	11	It	н	н	В
Trichloroethene	ND	0.5	ri	н	И	н	**		
Toluene	ND	1.0	н	ч	ĮI.	н	D	ur .	
1,1,2-Trichloroethane	ND	0.5	4		и	н	0	•	
Tetrachloroethene	7.1	0.1	IP	**	И	II	47	a	
Ethylbenzene	ND	1.0	ır	v	н	н	ø	u	
1,1,1,2-Tetrachloroethane	ND	0.5	0	v	н	n	11	**	
m,p-Xylene	ND	1.0	ų	v	н	н	11	41	
o-Xylene	ND	1.0	u	10	ш	н	ĮI.	11	
1,1,2,2-Tetrachloroethane	ND	0.5	10	11	н	n	и	u	
Freon 113	ND	0.5				#F	И		
Surrogate: Dibromofluoromethane		120 %	75.	-125	"	"	n	"	
Surrogate: Toluene-d8		104 %	75-	-125	"	#	"	**	
Surrogate: 4-Bromofluorobenzene		93.2 %	75-	-125	"	"	"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Reported: Project Manager: Ms. Lisa Lowe 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-08-910, P400cc (E703027-05) Vapor	Sampled: 0	7-Mar-07 R	leceived: (	08-Mar-0	7				
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5			II .	н	17	0	
Vinyl chloride	ND	0.1	u	v	II	н	· ·	4	
Chloroethane	ND	0.5	10	0	H	ч	v	4	
Trichlorofluoromethane	ND	0.5	11	11	Ħ	P	17	4	
Methylene chloride	ND	0.5	11	11	M	**	10	μ	
trans-1,2-Dichloroethene	ND	0.5	и	lt	н	e	11	Į.	
1,1-Dichloroethane	ND	0.5	И	μ	н	D	11	ls .	
1,1-Dichloroethene	ND	0.5	14	и	,	v.	14	н	
cis-1,2-Dichloroethene	ND	0.5	и	le .	•	9	ĮI.	н	
Chloroform	0.1	0.1	н	И		u	n	Ti .	В
1.1,1-Trichloroethane	ND	0.5	н	1	U	9	н	н	
Carbon tetrachloride	ND	0.1	я	ıf	**	4	н	P	
1,2-Dichloroethane	ND	0.1	pl	н	p.	11		if .	
Benzene	ND	0.1	н	N	P	и	н	v	
Trichloroethene	ND	0.5	ч	11		lı	n	"	
Toluene	ND	1.0		**	11	н		v	
1,1,2-Trichloroethane	ND	0.5		0	11	н	v	10	
Tetrachloroethene	15	0.1	ø			"	11	11	
Ethylbenzene	ND	1.0	4	**	n	н	10		
1,1,1,2-Tetrachloroethane	ND	0.5	11	44	н	H	и	li .	
m,p-Xylene	ND	1.0	н	11	н	n	н	le .	
o-Xylene	ND	1.0	и	P	n	w	н	и	
1.1,2,2-Tetrachloroethane	ND	0.5	H	н	II .	tr.	н	ı	
Freon 113	1.0	0.5	н	In	•			и	
Surrogate: Dibromofluoromethane		114%	75-	125	"	"	"	"	
Surrogate: Toluene-d8		103 %	75-7	125	н	п	"	"	
Surrogate: 4-Bromofluorobenzene		92.0 %	75-1	125	11	"	"	"	



Project: UR030807-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Reported: Project Manager: Ms. Lisa Lowe 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit		Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-09-05, P400cc (E703027-06) Vapor	Sampled: 07	-Mar-07 I	Received:	08-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	и	И	н	P	н	н	
Vinyl chloride	ND	0.1	И	Į.	ч	v	H	н	
Chloroethane	ND	0.5	Į4	n	H	· ·	н	И	
Trichlorofluoromethane	ND	0.5	н	н	н	I)	н		
Methylene chloride	ND	0.5	н	н	ų	v	n	le .	
trans-1,2-Dichloroethene	ND	0.5	ч	11	"	0	н	II	
1,1-Dichloroethane	ND	0.5	n	н	n	41	"	н	
1,1-Dichloroethene	ND	0.5	н	H		ı	*1	н	
cis-1,2-Dichloroethene	ND	0.5	**	,,	"	Н	ч	ч	
Chloroform	0.1	0.1	"	al .	И	н	4	ır	В
1,1,1-Trichloroethane	ND	0.5	0		н	н		t)	
Carbon tetrachloride	ND	0.1	9		11		ut .	0	
1,2-Dichloroethane	ND	0.1	10	41	п	H	v	11	
Benzene	ND	0.1		и	Ш	N.	•		
Trichloroethene	ND	0.5	lt.	je .	н		11	16	
Toluene	ND	1.0	н	и	n	H	10	и	
1,1,2-Trichloroethane	ND	0.5	Į*	и	П	11	a	и	
Tetrachloroethene	9.0	0.1	н	R	н	I)	u	и	
Ethylbenzene	ND	1.0	н	н	н	U	v	И	
1,1,1,2-Tetrachlorocthane	ND	0.5	н	п	n	v	10	H	
m,p-Xylene	ND	1.0	. "	н	n	9	11	II	
o-Xylene	ND	1.0	н	н	11	ĮI.	н	н	
1,1,2,2-Tetrachloroethane	ND	0.5	, ,	н	н	и	п	н	
Freen 113	0.8	0.5					н	н	
Surrogate: Dibromofluoromethane		116 %	7.5	5-125	"	"	"	#	
Surrogate: Toluene-d8		107 %	75	i-125	"	#	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	7.5	5-125	n	"	"	"	



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Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-09-10, P400cc (E703027-07) Vapor	Sampled: 07	-Mar-07 Re	eceived: 0	8-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	И	н	n,	11	н	n	
Vinyl chloride	ND	0.1	Н	и	D	11	н	И	
Chloroethane	ND	0.5	11	и	II.	lt	H	н	
Trichlorofluoromethane	ND	0.5	Ш	н	11	P			
Methylene chloride	ND	0.5	н	П	v	и	н	at	
trans-1,2-Dichloroethene	ND	0.5	н	н	v	lt.	н	4	
1,1-Dichloroethane	ND	0.5	**	,,	11	н	**	II-	
1,1-Dichloroethene	ND	0.5	#I	н	ĮI.	П	47	v	
cis-1,2-Dichloroethene	ND	0.5	H	H	Į.	н	v	v	
Chloroform	0.4	0.1	4			H	0	ø	В
1,1,1-Trichloroethane	ND	0.5	Dr.		h	н	41	a	
Carbon tetrachloride	ND	0.1	P	er er	н	н	•	11	
1,2-Dichloroethane	ND	0.1	•	e	П	ч	•	10	
Benzene	0.1	0.1	•		п	n	0	11	В
Trichloroethene	ND	0.5		"	rl	H	11	Į <b>i</b>	
Toluene	ND	1.0	"	10	н	n	4	н	
1,1,2-Trichloroethane	ND	0.5	14	p.	н	"	v	lı	
Tetrachloroethene	23	0.1	ľ	и	n	U	1•	П	
Ethylbenzene	ND	1.0	и	и	at .	•	ı.	н	
1,1,1,2-Tetrachloroethane	ND	0.5	le	н	17	11	ı	n	
m,p-Xylene	ND	1.0	н	н		11	н	н	
o-Xylene	ND	1.0	ļı		u)	н	п	4	
1,1,2,2-Tetrachloroethane	ND	0.5	II	п	41	н	"	#1	
Freon 113	1.1	0.5	н			n	N .		
Surrogate: Dibromofluoromethane		112 %	75-	125	,,	,,	"	"	
Surrogate: Toluene-d8		105 %	75-	125	n	"	μ	"	
Surrogate: 4-Bromofluorobenzene		94.8 %		125	n	"	"	n	



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Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119 Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit		Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-10-05, P400cc (E703027-08) Vapor	Sampled: 07	-Mar-07 l	Received:	08-Mar-07		•			
1,1-Difluoroethane (LCC)	ND	10	) ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	, "	v	н	н	10	41	
Vinyl chloride	ND	0.1	e	0	н	H	10	11	
Chloroethane	ND	0.5	;	U	H	n n	и		
Trichlorofluoromethane	ND	0.5	; "	u	н	"	14	ı	
Methylene chloride	ND	0.5	, "	0	н	**	ĮI.	11	
trans-1,2-Dichloroethene	ND	0.5	, "	9	И	H.	μ	μ	
I, I-Dichloroethane	ND	0.5	j 11	11	н	D	и	и	
1,1-Dichloroethene	ND	0.5	; "	11	н	u	la .	И	
cis-1,2-Dichloroethene	NĎ	0.5	j 11	и	rl	U	11	И	
Chloroform	0.1	0.1	и	И	н	4	II	н	В
1,1,1-Trichloroethane	ND	0.5	j "	И	*	a	н	и	
Carbon tetrachloride	ND	0.1	и	и	U	11	п	н	
1,2-Dichloroethane	ND	0.1	11	n	•	11	н	н	
Benzene	0.1	0.1	И	ji	D	11	н	н	В
Trichloroethene	ND	0.5	j "	н	ur .	11	н	н	
Toluene	ND	1.0	) "	И	•	И	н	II .	
1,1,2-Trichloroethane	ND	0.5	) <sup>H</sup>	н	•	Į(	n	n .	
Tetrachloroethene	42	0.1		н	v	ıı	#I	н	
Ethylbenzene	ND	1.0	) "	n		И	4	0	
1,1,1,2-Tetrachloroethane	ND	0.5		н	44	н	н	II.	
m,p-Xylene	ND	1.0		4	и	н	#ł	0	
o-Xylene	ND	1.0		**	и	И	H	41	
1,1,2,2-Tetrachloroethane	ND	0.5		0	н	μ	D	11	
Freon 113	1.2	0.5				н		11	
Surrogate: Dibromofluoromethane		112 %	6 7.	5-12 <b>5</b>	u	"	"	μ	
Surrogate: Toluene-d8		102 %	6 7.	5-125	"	"	n	n	
Surrogate: 4-Bromofluorobenzene		96.8 %	6 7.	5-125	"	**	n	n	



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Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-10-10, P400cc (E703027-09) Vapor	Sampled: 07	7-Mar-07 R	eceived: (	)8-Mar-07	ı				
1,1-Difluorocthane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	N	M	11	H		н	
Vinyl chloride	ND	0.1	· P		11	н	v	н	
Chloroethane	ND	0.5	D		н	11	v	M	
Trichlorofluoromethane	ND	0.5	"		lt	H	v	n	
Methylene chloride	ND	0.5	v		14	н	11	v	
trans-1,2-Dichloroethene	ND	0.5	•	v	16	n	v	W	
1,1-Dichloroethane	ND	0.5	•	u	н	ıı.	17	W.	
1,1-Dichloroethene	ND	0.5	"	•	11	н	10	v	
cis-1,2-Dichloroethene	ND	0.5	10	0	п	D	ıı	u	
Chloroform	0.1	0.1	41	41	11	U	16	p	В
1,1,1-Trichloroethane	ND	0.5	4	10	н	D	14	и	
Carbon tetrachloride	ND	0.1	И	p.	ч	U	п	и	
1,2-Dichloroethane	ND	0.1	p	P	"	u	н	II	
Benzene	ND	0.1		n	•	11	п	н	
Trichloroethene	ND	0.5	н	н	n	11	н	ri .	
Toluene	ND	1.0	п	п		и	н	н	
1.1.2-Trichloroethane	ND	0.5	н	n	17	И	н	н	
Tetrachloroethene	27	0.1	n	rl	•	н	,,	"	
Ethylbenzene	ND	1.0	н	4	11	n	.,	н	
1,1,1,2-Tetrachloroethane	ND	0.5	n			il.	0	H	
m,p-Xylene	ND	1.0	D.	vr	н	п	v		
o-Xylene	ND	1.0	v	•	н	н	v	U	
1,1,2,2-Tetrachloroethane	ND	0.5	0	ø	н	п	v	41	
Freon 113	0.6	0.5			н		0		
Surrogate: Dibromofluoromethane		125 %	75.	-125	"	"	n	"	
Surrogate: Toluene-d8		104 %	75-	-125	"	"	0	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	7 <b>5</b> -	-125	"	"	μ	и	



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Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-05-08, P400cc (E703027-10) Vapor	Sampled: 07	-Mar-07 Re	ceived:	08-Mar-07		<u>.</u>			
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	н	н	11	10	ч	н	
Vinyl chloride	ND	0.1	n	**	"	н	n	n	
Chloroethane	ND	0.5	н	н	14	11	*1	M	
Trichlorofluoromethane	ND	0.5	н	н	11	H	ч	ч	
Methylene chloride	ND	0.5	n	н		н	D	п	
trans-1,2-Dichloroethene	ND	0.5	н	н	l•	н	•	4	
1,1-Dichloroethane	ND	0.5	н	Ħ	10	н	D	N,	
1,1-Dichloroethene	ND	0.5	n	,	III	11	v	Th.	
cis-1,2-Dichloroethene	ND	0.5	н	rl rl	11	н	9	0	
Chloroform	0.1	0.1	ч	"	10	Ħ	u	0	В
1,1,1-Trichloroethane	ND	0.5		,	и	"	11	19	
Carbon tetrachloride	ND	0.1	**	e	14	н	10	9	
1,2-Dichloroethane	ND	0.1	III	•	н	n	11	а	
Benzene	ND	0.1	P		11	"	11	v	
Trichloroethene	ND	0.5	"	v	п	n	11	•	
Toluene	ND	1.0	v	u	ш	н	41	0	
1,1,2-Trichloroethane	ND	0.5	•		Ш	"	11	U	
Tetrachloroethene	25	0.1	v	U	п	n		Tr.	
Ethylbenzene	ND	1.0	v		Ш	н	16	9	
1,1,1,2-Tetrachloroethane	ND	0.5	0	0	Ш	H	ji .	0	
m,p-Xylene	ND	1.0	11	41	н	ч	ĮI.	U	
o-Xylene	ND	1.0	11	11	Ħ	n	и	U	
1,1,2,2-Tetrachloroethane	ND	0.5	11	11		"	и	19	
Freon 113	ND	0.5	11	11	rl	al	и	lt	
Surrogate: Dibromofluoromethane		116 %	75	-125	**	"	"		
Surrogate: Toluene-d8		102 %	75	-125	"	"	**	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	75	-125	**	"	"	"	



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Las Vegas, NV 89119

Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-05-98, P400cc (E703027-11) Vapor	Sampled: 07	-Mar-07 Re	eceived: 0	8-Mar-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	И	И	н	41	н	н	
Vinyl chloride	ND	0.1	н	P.	II .	11	Ħ	н	
Chloroethane	ND	0.5	н	п	"	lt	н	4	
Trichlorofluoromethanc	ND	0.5	н	п	P	li.	ч		
Methylene chloride	ND	0.5	н	н			ri	v	
trans-1,2-Dichloroethene	ND	0.5	н	"	v	н	N,		
1,1-Dichloroethane	ND	0.5	,	н	4	п	v	w	
1,1-Dichloroethenc	ND	0.5	H	н	ø	п	w	w	
cis-1,2-Dichloroethene	ND	0.5	11	4	"	n	t)	0	
Chloroform	ND	0.1		IP.	11	н	11	10	
1,1,1-Trichloroethane	ND	0.5	U	u	н	и.	11	**	
Carbon tetrachloride	ND	0.1	0	19	Ш	H	14	11	
1,2-Dichloroethane	ND	0.1	U	U	ıl	н	И	10	
Benzene	ND	0.1	v	11	н	н	ĮI.	11	
Trichloroethene	ND	0.5	•	41	н	ч		и	
Toluene	ND	1.0	j <b>a</b>	11	н	II.	11	II	
1,1,2-Trichloroethane	ND	0.5		11	11	v	И	и	
Tetrachloroethene	17	0.1	p			9	н	н	
Ethylbenzene	ND	1.0	н	и	14	11	Ħ	M	
1,1,1,2-Tetrachloroethanc	ND	0.5	la .	н		ď	n	n	
m,p-Xylene	ND	1.0	н	н				н	
o-Xylene	ND	1.0	п	п	v	и	I)	ч	
1,1,2,2-Tetrachloroethane	ND	0.5	n	н	•	11	ь		
Freon 113	ND	0.5	н	H			17	<b></b>	
Surrogate: Dibromofluoromethane		118 %	75-	125	"	B	"	"	
Surrogate: Toluene-d8		106 %	75-	125	17	н	"	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	75-	125	n	"	"	"	



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Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

## Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Anaiyzed	Method	Notes
SVB-05-13, P400cc (E703027-12) Vapor	Sampled: 07	-Mar-07 Re	eceived: 08	-Маг-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	"	н	11	и	,,	p)	
Vinyl chloride	ND	0.1	н	н	И	н		ч	
Chloroethane	NĐ	0.5	н	н	10	Н	11	ч	
Trichlorofluoromethane	ND	0.5	n	ų	11	II .	n	el .	
Methylene chloride	ND	0.5		н		п	al .	4	
trans-1,2-Dichloroethene	ND	0.5		**	И	н	0	n	
1,1-Dichloroethane	ND	0.5	t)	4	И	H		v	
1,1-Dichloroethene	ND	0.5	v	D	14		v	u u	
cis-1,2-Dichloroethene	ND	0.5	P	IP	19	n	v	н	
Chloroform	0.1	0.1	W	tł .	И	H	ø	ч	В
1,1,1-Trichloroethane	ND	0.5	0	tr.	14	n	u	u u	
Carbon tetrachloride	ND	0.1	P)	D.	n	н	v	v	
1,2-Dichloroethane	ND	0.1	v	w	п	ri	10	9	
Benzene	ND	0.1	19	•	п	н	ĮI.	11	
Trichloroethene	ND	0.5	10	41	н	ų	ĮI.	11	
Toluene	ND	1.0	11	11	н		ı	11	
1,1,2-Trichloroethane	ND	0.5	19	и	H	tł .	И	μ	
Tetrachloroethene	1.1	0.1	Į <b>s</b>	l•	н	Ŋ	ļŧ	11	
Ethylbenzene	ND	1.0	ĮI.	11		u,	и	l1	
1,1,1,2-Tetrachloroethanc	ND	0.5		и	n	w	16	И	
m,p-Xylene	ND	1.0	14	14	•	D	ı	II .	
o-Xylene	ND	1.0	14	и	**	u	ı	н	
1,1,2,2-Tetrachloroethane	ND	0.5	n	le	e	10	И	н	
Freon 113	ND	0.5	н				н		
Surrogate: Dibromofluoromethane		123 %	75-1	25	u	**	"	"	
Surrogate: Toluene-d8		103 %	75-1	25	"	n	"	rr .	
Surrogate: 4-Bromofluorobenzene		100 %	75-1	25	**		r#	"	



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Project: UR030807-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-06-08, P400cc (E703027-13) Vapor	Sampled: 07	-Mar-07 Re	ceived: 0	8-Маг-07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	11	н	11	И	н	N	
Vinyl chloride	ND	0.1	н	н		19	n	4	
Chloroethane	ND	0.5		н	u		n		
Trichlorofluoromethane	ND	0.5	н	li	19	u	n	PI	
Methylene chloride	ND	0.5	п	H	10	0	н	H	
trans-1,2-Dichloroethene	ND	0.5	н	п	•	44	н	M	
1,1-Dichloroethane	ND	0.5	н	п	10	a	н	п	
1,1-Dichloroethene	ND	0.5	11	н	v	41	n	п	
cis-1,2-Dichloroethene	ND	0.5	11	li	U	44	ri	н	
Chloroform	0.1	0.1	н	II		14	N	ч	В
1,1,1-Trichloroethane	ND	0.5	н	II .	u	и	II .	D.	
Carbon tetrachloride	ND	0.1	0	Ш	•	lt .	**	4	
1,2-Dichloroethane	ND	0.1	н	н	41	H	n	4	
Benzene	ND	0.1	н	н	u	н	D	u	
Trichloroethene	ND	0.5	ri	rl	17	h	H	v	
Toluene	ND	1.0	н	н	11	н	н	n,	
1,1,2-Trichloroethane	ND	0.5	71		11	н	н		
Tetrachloroethene	ND	0.1	n	rl	la .	11	*t	0	
Ethylbenzene	ND	1.0	н	N	14	п	•		
1,1,1,2-Tetrachloroethane	ND	0.5			n	н	v	"	
m,p-Xylene	ND	1.0	Ħ	**	la .	н	11	4	
o-Xylene	ND	1.0	al-	•	н	н	4	41	
1,1,2,2-Tetrachloroethane	ND	0.5	n	b	н	"	11		
Freon 113	ND	0.5	IP			п			
Surrogate: Dibromofluoromethane		116%	75	125	"	"	"	n	
Surrogate: Toluene-d8		102 %	75	125	"	"	,,	"	
Surrogate: 4-Bromofluorobenzene		94.8 %	75-	125	"	"	,,	n	



Project: UR030807-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-06-12, P400cc (E703027-14) Vapor	Sampled: 07-	-Mar-07 Ro	eceived: 08	-Mar-07				•	
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC70809	08-Mar-07	08-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	u	v	п	II .	н	la .	
Vinyl chloride	ND	0.1	U	u	н	**	и	lt	
Chloroethane	ND	0.5	v	10	н	•1	н	И	
Trichlorofluoromethane	ND	0.5	9	11	н	D	ļ	ı	
Methylene chloride	ND	0.5		•	n	v	"	ıı	
trans-1,2-Dichloroethene	ND	0.5	v	40	rl		н	И	
1,1-Dichloroethane	ND	0.5	je .	14	н	•	н	н	
1,1-Dichloroethene	ND	0.5	ď			v		н	
cis-1,2-Dichloroethene	ND	0.5		и	H		11	П	
Chloroform	0.1	0.1	jø.	H	T)	,,	н	н	В
1,1,1-Trichloroethane	ND	0.5	Įi.	Į.	D.		n	н	
Carbon tetrachloride	ND	0.1	le .	н	N	9	н	н	
1,2-Dichloroethane	ND	0.1	н	н	H.	11	4	ч	
Benzene	ND	0.1	ji.	п	v	н	**	11	
Trichloroethene	ND	0.5	н	11		И	н	IF.	
Toluene	ND	1.0	н	н	4	и	"	II.	
1,1,2-Trichloroethane	ND	0.5	II	н		н	н	п	
Tetrachloroethene	12	0.1	н	n	w	и	н	II	
Ethylbenzene	ND	1.0	n	н	19	н	н	II.	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н	10	н		II.	
m,p-Xylene	ND	1.0	н	ч	10	н	n	**	
o-Xylene	ND	1.0	ч	Ŋ	и	н	#I	0	
1,1,2,2-Tetrachloroethane	ND	0.5		II.	la .	И	н	n,	
Freon 113	ND ND	0.5		"	И	н	н		
Surrogate: Dibromofluoromethane		110 %	75-1.	25	"	"	"	"	
Surrogate: Toluene-d8		103 %	75-1	25	"	"	μ	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	75-1.	25	"	"	,,	n	



Project: UR030807-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

Spike

Source

Project Manager: Ms. Lisa Lowe

Reported: 14-Mar-07

%REC

RPD

## Volatile Organic Compounds by EPA Method 8260B - Quality Control H&P Mobile Geochemistry

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EC70809 - EPA 5030										
Blank (EC70809-BLK1)				Prepared	& Analyze	ed: 08-Ma	r-07			
1,1-Difluoroethane (LCC)	ND	10	ug/l							
Dichlorodifluoromethane	ND	0.5	· P							
Vinyl chloride	ND	0.1	Pt .							
Chloroethane	ND	0.5	4							
Trichlorofluoromethane	ND	0.5	n							
Methylene chloride	ND	0.5	**							
trans-1,2-Dichloroethene	ND	0.5	**							
1,1-Dichloroethane	ND	0.5	0							
1,1-Dichloroethene	ND	0.5								
cis-1,2-Dichloroethene	ND	0.5	v							
Chloroform	0.16	0.1	v							
I,1,1-Trichloroethane	ND	0.5	u							
Carbon tetrachioride	ND	0.1	u							
1,2-Dichloroethane	ND	0.1	u							
Benzene	0.18	0.1	u							
Trichloroethene	ND	0.5	a							
Toluene	ND	1.0	•							
1,1,2-Trichloroethane	ND	0.5	"							
Tetrachloroethene	ND	0.1	"							
Ethylbenzene	ND	1.0	11							
1,1,1,2-Tetrachloroethane	ND	0.5	•							
m,p-Xylene	ND	1.0								
o-Xylene	ND	1.0	u							
1,1,2,2-Tetrachloroethane	ND	0.5	**							
Freon 113	ND	0.5	u							
Surrogate: Dibromofluoromethane	2.89		"	2.50		116	75-125			
Surrogate: 1.2-Dichloroethane-d4	3,07		"	2.50		123	75-125			
Surrogate: Toluene-d8	2,62		"	2.50		105	75-125			
Surrogate: 4-Bromofluorobenzene	2.39		u	2.50		95.6	75-125			



Project: UR030807-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Reported:

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

14-Mar-07

#### Notes and Definitions

B Analyte is found in the associated blank as well as in the sample (CLP B-flag).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

# MOBILE - GEOCHEMISTRY

## **Chain of Custody Record**

E703027

Date: 3 - 7 - 07	
: H&P Project # <u>元人(030</u> 80 <u>7-1</u> つ	

2470 Impala Dr., Carisbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

&P Project#	<u> </u>	1-10	 
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MOBIL	E GEO	CHEMIS	STRY
H	0	P	<b>A</b>

# **Chain of Custody Record**

2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date: 3 7 07	<del>1</del> 9
H&P Project # <u>UK 0 50807-(0</u>	
Outside Lab:	

Client: URS							Collec	tor: _		<u>c</u>	- . OK	S.	<u> </u>						P	age: _	2	_ of	2	
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Email: Liver Lower	(Little Corp. Com Phone	: <u>70</u> 2	- 44	<u>2-74</u>	<u> 33</u>		Fax: _	<u>ルン-</u>	44.	2-9	147				_ 1	Turn a	round	time:	412	<u>. 44.</u>	<u>{</u>			
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								418.1 TRPH	টু	_	gas	ັດນ	DTSC/LARWQCB	Seu	ist	BTEX/MTBE	LCC (specify)	Naphthalene	ane	Fixed Gases				Total # of containers
Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	표	418.	8021	втех	ТРН	NOC's	DTS	Ketones	Full List	BTE	227	Nap	Methane	Fixe				Total
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'Signature constitutes authorization	to proceed with analysis and accep	tance of cor	ndition on b	ack.	Sample dis	sposal instructi	on:		Dis,	nosai (	\$2.00	each	[		Return	lo clien	!		Pickup	1				
						•		×.																



#### 23 March 2007

Ms. Lisa Lowe URS - Las Vegas 811 Grier Dr.

Las Vegas, NV 89119

RE: UR032007-10

Enclosed are the results of analyses for samples received by the laboratory on 20-Mar-07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Janis Villarreal

Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.



Project: UR032007-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Trip Blank	E703070-01	Vapor	07-Feb-07	20-Mar-07
SVB-16-5	E703070-02	Vapor	19-Mar-07	20-Mar-07
SVB-16-10	E703070-03	Vapor	19-Mar-07	20-Mar-07
SVB-16-25	E703070-04	Vapor	19-Mar-07	20-Mar-07
SVB-15-15	E703070-05	Vapor	19-Mar-07	20-Mar-07
SVB-15-20	E703070-06	Vapor	19-Mar-07	20-Mar-07
SVB-14-10	E703070-07	Vapor	19-Mar-07	20-Mar-07
SVB-14-20	E703070-08	Vapor	19-Mar-07	20-Mar-07
SVB-13-5	E703070-09	Vapor	19-Mar-07	20-Mar-07
SVB-13-10.5	E703070-10	Vapor	19-Mar-07	20-Mar-07
SVB-13-910.5	E703070-11	Vapor	19-Mar-07	20-Mar-07
SVB-13-20	E703070-12	Vapor	19-Mar-07	20-Mar-07

Sample written as SVB-16-25 on the chain-of-custody was labeled SVB-16-20.5 on the container.



Project: UR032007-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Reported: Project Manager: Ms. Lisa Lowe 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (E703070-01) Vapor	Sampled: 07-Feb-07	Received: 20	0-Mar-07						
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5			н	H	17	0	
Vinyl chloride	ND	0.1	0	4	н	н	41	11	
Chloroethane	ND	0.5			ļ	n	"	u	
Trichlorofluoromethane	ND	0.5	v	v	и	н	9	0	
1,1-Dichloroethene	ND	0.5	0	0	н	н	11	11	
Methylene chloride	ND	0.5	v	v	н	II .	4	и	
Freon 113	ND	0.5	v	v	H	н	11	la	
trans-1,2-Dichloroethene	ND	0.5	0	0	н	I)	4	Į <b>I</b>	
1,1-Dichloroethane	ND	0.5	4	41	н	P	41	18	
cis-1,2-Dichloroethene	ND	0.5	u	u	н	U	11	18	
Chloroform	ND	0.1	ч	11	II	17	16	И	
1,1,1-Trichloroethane	ND	0.5	9	41	н	n	и	И	
Carbon tetrachloride	ND	0.1	41	11	n	P	10	ļŧ	
1,2-Dichloroethane	ND	0.1	v	17	н	н	u	н	
Benzene	ND	0.1	10	10	н	H	0	И	
Trichloroethene	ND	0.5	4	0	н	ч	u	18	
Toluene	ND	1.0	u	11	п	P	v	п	
1,1,2-Trichloroethane	ND	0.5		**	h	"	•	la	
Tetrachloroethene	ND	0.1	9	11	н	19	•	И	
Ethylbenzene	ND	1.0	41	11	"	v	11	Į <b>i</b>	
1,1,1,2-Tetrachloroethane	ND	0.5	u	41	**	v		и	
m,p-Xylene	ИD	1.0	11	11	Ħ	v	le .	la	
o-Xylene	ND	1.0	41	11	н	u u	II.	И	
1,1.2,2-Tetrachloroethane	NDND_	0.5							
Surrogate: Dibromofluoromethane	;	108 %	75-1.	25	"	"	n	"	
Surrogate: 1,2-Dichloroethane-d4		114%	75-1	25	"	"	,,	"	
Surrogate: Toluene-d8		104 %	75-1	25	**	ft	"	,,	
Surrogate: 4-Bromofluorobenzene		96.0 %	75-1		"	"	"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032007-10

Project Number: 26698724 / Maryland Square Al Phillips Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-16-5 (E703070-02) Vapor	Sampled: 19-Mar-07	Received: 20-1	Маг-07						
I,1-Difluoroethane (LCC)	30		ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	"	"	н	Tr.	н	И	
Vinyl chloride	ND	0.1	u	u	н	ч	P.	н	
Chloroethane	ND	0.5	v	0	П	al	le .	н	
Trichlorofluoromethane	ND	0.5	0	0	н	н	н	h	
1,1-Dichloroethene	ND	0.5		"	н	4	н	н	
Methylene chloride	ND	0.5			н	D		js.	
Freon 113	ND	0.5	0	0	н	at-	le .	н	
trans-1,2-Dichloroethene	NĎ	0.5	0	•	н	11	14	16	
1.1-Dichloroethane	ND	0.5	n		н	•	10	16	
cis-1,2-Dichloroethene	ND	0.5		v	н	II.	11	10	
Chloroform	0.1	0.1	II .	v	и	n	а	41	
1,1,1-Trichloroethane	ND	0.5		U	н	н	"	le	
Carbon tetrachloride	ND	0.1	D)	•	н	Ħ	41	je .	
1,2-Dichloroethane	ND	0.1	v	v	и	П	u	μ	
Benzene	0.1	0.1	o	•	И	н	10	и	
Trichloroethene	ND	0.5	II.	n,	и	н	41	И	
Toluene	ND	1.0	II .	v	и	п	a	μ	
1,1,2-Trichloroethane	ND	0.5	P	•	н	н	4	и	
Tetrachloroethene	ND	0.1	I)	D	н	N	11	И	
Ethylbenzene	ND	1.0	u .	u u	п	II .	а	μ	
1,1,1,2-Tetrachloroethane	ND	0.5		w	н	"	и	и	
m,p-Xylene	ND	1.0	I)	•	н	P	и	И	
o-Xylene	ND	1.0	u .	U	11	P	н	и	
1,1,2,2-Tetrachloroethane	ND	0.5		0	н	н	К	H	
Surrogate: Dibromofluoromethar	ie	111 %	75-12	5	n	"	a	n	
Surrogate: 1,2-Dichloroethane-d	4	117 %	75-12	5	"	"	"	,,	
Surrogate: Toluene-d8		105 %	75-12	5	,,	"	н	"	
Surrogate: 4-Bromofluorobenzen	e	93.2 %	75-12	5	#	"	n	n	



Project: UR032007-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-16-10 (E703070-03) Vapor	Sampled: 19-Mar-07	Received:	20-Маг-07						
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	Ħ	н	11	ľ	И	u <sub>t</sub>	
Vinyl chloride	ND	0.1	и	n	u	ш	н	Ð	
Chloroethane	ND	0.5	ri	pl	U	lt	#1	#1	
Trichlorofluoromethane	ND	0.5	н	н	0	11	P1	н	
1,1-Dichloroethene	ND	0.5	н	н	II .	11	•1	н	
Methylene chloride	ND	0.5	н	H		ļ	•1	ч	
Freon 113	ND	0.5	n	,,	v	н		P	
trans-1,2-Dichloroethene	ND	0.5	rl		19	lt	**	P	
1,1-Dichloroethane	ND	0.5	н	н	11	н	PF .	ч	
cis-1,2-Dichloroethene	ND	0.5	н	PI	a	ļ	n	ч	
Chloroform	ND	0.1	н	rl	19	lt	pl	II.	
1,1,1-Trichloroethane	ND	0.5	н	н	10	н	**	0	
Carbon tetrachloride	ND	0.1	н	н	11	н	II.	II.	
1,2-Dichloroethane	ND	0.1	n		11	н	••	v	
Benzene	ND	0.1	н	н	11	н	•	U	
Trichloroethene	ND	0.5	п	n	11	н		v	
Toluene	ND	1.0	и	*1	-11	н	•	11	
1,1,2-Trichloroethane	ND	0.5	н	н	11	II	u	11	
Tetrachloroethene	ND	0.1	п	n	11	II .	U	U	
Ethylbenzene	ND	1.0	#I	и	11	Ħ	•	0	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н	И	Ħ	v	0	
m,p-Xylene	ND	1.0	И	Tr.	ĮI.	н	v	U	
o-Xylene	ND	1.0	n .		и	ri	v	U	
1,1,2,2-Tetrachloroethane	ND	0.5	11	b	И	н	ø	0	
Surrogate: Dibromofluoromethane	?	114%	75-12	25	u	a	"	"	
Surrogate: 1,2-Dichloroethane-d4		119 %	75-12	25	"	n	"	"	
Surrogate: Toluene-d8		105 %	75-12	25	#	n	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	75-12	25	"	n	**	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032007-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-16-25 (E703070-04) Vapor	Sampled: 19-Mar-07	Received:	20-Mar-07						
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	v	0	H	r	41	И	
Vinyl chloride	ND	0.1	0	U	н	It	11	j <b>e</b>	
Chloroethane	ND	0.5	•	"	н	l)	11	ļ	
Trichlorofluoromethane	ND	0.5	U	4	н	II .	и	н	
1,1-Dichloroethene	ND	0.5	v	"	n	u u	ıı	и	
Methylene chloride	ND	0.5	0	0	н	0	н	н	
Freon 113	ND	0.5	0	44	н	Ŋ	н	н	
trans-1,2-Dichloroethene	ND	0.5	17	17	ш	II .	li .	N	
1,1-Dichloroethane	ND	0.5	v	10	Ш	**	п	н	
cis-1,2-Dichloroethene	ND	0.5	4	44	н	P	n	n	
Chloroform	ND	0.1	v	41	n	"	ri	н	
1,1,1-Trichloroethane	ND	0.5	4•	и	н	Ŋ	н	п	
Carbon tetrachloride	ND	0.1	4	p.	н	II.		u u	
1,2-Dichloroethane	ND	0.1				u	el .	D	
Benzene	ND	0.1	lt	н	н	0	ay .	H	
Trichloroethene	ND	0.5	И	н	н	u	"	D	
Toluene	ND	1.0	Įt.		II	u	н	ri .	
1,1,2-Trichloroethanc	ND	0.5	и		17	lı	н	v	
Tetrachloroethene	0.6	0.1	н	н	n	ĮI.	"	T)	
Ethylbenzene	ND	1.0	н	н	"	II		II.	
1,1,1,2-Tetrachloroethane	ND	0.5	н		"	И	H	I)	
m,p-Xylene	ND	1.0	н	н	**	И		T)	
o-Xylene	ND	1.0	н	н	11	И		ь	
1,1,2,2-Tetrachloroethane	ND	0.5	н	н					
Surrogate: Dibromofluoromethane	?	112 %	75-1.	25	"	#	"	"	
Surrogate: 1,2-Dichloroethane-d4		119 %	75-1.	25	μ	n	"	**	
Surrogate: Toluene-d8		105 %	75-1.	25	n	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	75-1.	25	n	**	"	tt	



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Las Vegas, NV 89119

Project: UR032007-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-15-15 (E703070-05) Vapor	Sampled: 19-Mar-07	Received:	20-Mar-07	r					•
1,1-Difluoroethane (LCC)	240	10	ug/I	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	н	h	· ·	16	н	n	
Vinyl chloride	ND	0.1	И	н	0	н	n	D.	
Chloroethane	ND	0.5	н	н	4	n	II.	U	
Trichlorofluoromethane	ND	0.5	н	н	10	н	0	v	
1,1-Dichloroethene	ND	0.5	н	н	11	н	v	v	
Methylene chloride	ND	0.5	н	ŋ	11	п	U	9	
Freon 113	ND	0.5	N	n	11	н	11	41	
trans-1,2-Dichloroethene	ND	0.5	н	н	11	4	a	н	
1,1-Dichloroethane	ND	0.5	н	n	И	n n	u	И	
cis-1,2-Dichloroethene	ND	0.5	IP.	D	lt	н	11	ıı	
Chloroform	ND	0.1	"	e	И	Đ	ıı	и	
1,1,1-Trichloroethane	ND	0.5	v	"	ļŧ	"	la .	И	
Carbon tetrachloride	ND	0.1	u	u	н	U	И	н	
1,2-Dichloroethane	ND	0.1	u	11	н	Ø	H	н	
Benzene	ND	0.1	**	11	н	u	н	n	
Trichloroethene	ND	0.5	11	41	n	u	н	н	
Toluene	ND	1.0	ji .	11	и	17	н	п	
1,1,2-Trichloroethane	ND	0.5	и	И	**	11	н	n	
Tetrachloroethene	ND	0.1	И	10	D	11	n	н	
Ethylbenzene	ND	1.0	н	14	U	И	н	ч	
1,1,1,2-Tetrachloroethane	ND	0.5	н	li .	u	И	It	Iţ	
m,p-Xylene	NĎ	1.0	n	н	11	И	•	II;	
o-Xylene	ND	1.0	н	н	а	Į1	D	II .	
1,1,2,2-Tetrachloroethane	ND	0.5	н			н		»I	
Surrogate: Dibromofluoromethane	?	114%	75-1.	25	,,	"	,,,	"	
Surrogate: 1,2-Dichloroethane-d4		122 %	75-1.		"	"	"	"	
Surrogate: Toluene-d8		104 %	75-1.		,,	"	,,	и	
Surrogate: 4-Bromofluorobenzene		92.4 %	75-1.		n	"	"	,,	



Project: UR032007-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-15-20 (E703070-06) Vapor	Sampled: 19-Mar-07	Received:	20-Mar-07						
1,1-Difluoroethane (LCC)	12	10	ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	11	"	н	Pt	и	16	
Vinyl chloride	ND	0.1	v	u	н	H	4	μ	
Chloroethane	ND	0.5	11	•	н	H	41	le .	
Trichlorofluoromethane	ND	0.5	41	10	н	ч	4	И	
1,1-Dichloroethene	ND	0.5	v	u	н	n	**		
Methylene chloride	ND	0.5	11	•	н	н	11	le .	
Freon 113	ND	0.5	11	4	н	н	и	į.	
trans-1,2-Dichloroethene	ND	0.5	a	**	н	n	ĮI.	Į1	
1,1-Dichloroethane	ND	0.5	11	11	и	n	14	μ	
cis-1,2-Dichloroethene	ND	0.5	la .	11	н	rt .	И	la .	
Chloroform	ND	0.1	**	14	н	0	14	н	
1,1,1-Trichloroethane	ND	0.5	11	41	н	U	11	ji .	
Carbon tetrachloride	ND	0.1	11	"	n	U	11	и	
1,2-Dichloroethane	ND	0.1	16	9	н	*	10	И	
Benzene	ND	0.1	μ	41	11	n	4	и	
Trichloroethene	ND	0.5	11	4	h	D.	•	и	
Toluene	ND	1.0	11	11	н	D	н	и	
1,1,2-Trichloroethane	ND	0.5	**	10	н	u)	И	И	
Tetrachloroethene	0.2	0.1	41	11	н	n	н	и	
Ethylbenzene	ND	1.0	11	41	н	u	19	и	
1,1,1,2-Tetrachloroethane	ND	0.5		и	Ħ	u	II .	и	
m,p-Xylene	ND	1.0	И	И	н	0	н	И	
o-Xylene	ND	1.0	ji .	19	н	U	н	и	
1,1,2,2-Tetrachloroethane	ND	0.5			ı		п	и	
Surrogate: Dibromofluoromethane	,	114 %	75-12	25	"	"	,,	"	
Surrogate: 1,2-Dichloroethane-d4		118 %	75-12	25	"	"	n	"	
Surrogate: Toluene-d8		104 %	75-12	25	**	"	"	"	
Surrogate: 4-Bromofluorohenzene		95.6 %	75-12	25	"	"	n	"	



Project: UR032007-10

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Reported: Project Manager: Ms. Lisa Lowe 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Not <b>e</b> s
SVB-14-10 (E703070-07) Vapor	Sampled: 19-Mar-07		20-Mar-07						
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	U	10	н	u u	lt	и	
Vinyl chloride	ND	0.1	U	4	н	11	•	И	
Chloroethane	ND	0.5	u	"	H	·P		и	
Trichlorofluoromethane	ND	0.5	v	"	н	II .	u	II .	
1,1-Dichloroethene	ND	0.5	0	0	н	**	le .	II.	
Methylene chloride	ND	0.5	11	11	н	н	н	и	
Freon 113	ND	0.5	w	ø	н	η	11	II.	
trans-1,2-Dichloroethene	ND	0.5	u .	v	n	n	•	"	
1,1-Dichloroethane	ND	0.5	0	U	н	н		11	
cis-1,2-Dichloroethene	ND	0.5	U	0	н	н	1)	11	
Chloroform	ND	0.1	v	v	н	н	•	11	
1,1,1-Trichloroethane	ND	0.5	U	17	н	n	U		
Carbon tetrachloride	ND	0.1	U	0	н	н	U	ls .	
1,2-Dichloroethane	ND	0.1	"	v	н	П	•	II	
Benzene	ND	0.1	u .	v	н	н	D	II.	
Trichloroethene	0.6	0.5	U	0	П	ri	u u	и	
Toluene	ND	1.0	*	0	н	н	0	II	
1,1,2-Trichloroethane	ND	0.5	u .	v	п	n	и	и	
Tetrachloroethene	87	0.1	U	w	П	ri	le	la .	
Ethylbenzene	ND	1.0	D	P	п	H	H	II.	
1.1,1.2-Tetrachloroethane	ND	0.5	U	U	п	IF.	И	и	
m,p-Xylene	ND	1.0	o	0	н	n	н	и	
o-Xylene	ND	1.0	"	u	н	II .	н	II	
1.1,2,2-Tetrachloroethane	ND	0.5					н		
Surrogate: Dibromofluoromethane	,	116%	75-12	2.5	,,	"	n	,,	
Surrogate: 1,2-Dichloroethane-d4		115%	75-12		"	"	#	rt	
Surrogate: Toluene-d8		104 %	75-12		14	"	**	n	
Surrogate: 4-Bromofluorobenzene		95.2 %	75-12		n	,,	и		
San . Spare. 4 Di Sirisjinor Obertaerie		· · ·	7.0-12	••					



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Las Vegas, NV 89119

Project: UR032007-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-14-20 (E703070-08) Vapor	Sampled: 19-Mar-07	Received:	20-Mar-07					_	
1,1-Difluoroethane (LCC)	ND	10	սք/I	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	0	0	н	**	41	4	
Vinyl chloride	ND	0.1	n	1)	Н	N .	41	9	
Chloroethane	ND	0.5	D	"	j4	n	a	11	
Trichlorofluoromethane	ND	0.5	IF .	"	н	н	11	a	
1,1-Dichloroethene	ND	0.5	*	11	н	#I	41	11	
Methylene chloride	ND	0.5	P	44	н	н	10	41	
Freon 113	ND	0.5	4	4	н	ч	41	p.	
trans-1,2-Dichloroethene	ND	0.5	M	P	и	n	u	•	
1,1-Dichloroethane	ND	0.5	н	**	И	n	v	н	
cis-1,2-Dichloroethene	ND	0.5	4	и	14	н	0	И	
Chloroform	0.2	0.1			и	ч	"	μ	
1,1,1-Trichloroethane	ND	0.5	н	*1	И	н	v	п	
Carbon tetrachloride	ND	0.1	И	4	ĮI.	н	0	И	
1,2-Dichloroethane	ND	0.1	P	P	и	И	u	μ	
Benzene	ND	0.1	#F	D.	la .	n	v	н	
Trichloroethene	1.0	0.5	И	4	н	н	41	И	
Toluene	ND	1.0		"	н	н	11	js.	
1,1,2-Trichloroethane	ND	0.5	*		П	н	1.	н	
Tetrachloroethene	170	0.1	Pt .	4	н	Nt.	μ	И	
Ethylbenzene	ND	1.0	D	"	н	D	и		
1,1,1,2-Tetrachloroethane	ND	0.5	*	*	н		lt	ls	
m,p-Xylene	ND	1.0	P	4	н	P	н	11	
o-Xylene	ND	1.0	Tr.	P	н	I)	Į <b>i</b>	11	
1,1,2,2-Tetrachloroethane	ND	0.5			н		н	11	
Surrogate: Dibromofluoromethane	<b>?</b>	121 %	75-1.	25	,,	"	,,	"	
Surrogate: 1,2-Dichloroethane-d4		124 %	75-1.	25	n	п	"	n	
Surrogate: Toluene-d8		103 %	75-1.	25	н	rt	"	0	
Surrogate: 4-Bromofluorobenzene		92.4 %	75-1.	25	"	n	#	"	



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Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit U		lution actor	Batch	Prepared	Analyzed	Method	Notes
SVB-13-5 (E703070-09) Vapor	Sampled: 19-Mar-07	Received: 20-M	lar-07						
1,1-Difluoroethane (LCC)	ND	10 ι	ıg/i	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	и	"	"	17	н	н	
Vinyl chloride	ND	0.1	и	14	*	11	н	н	
Chloroethane	ND	0.5	Н	н	0	11	н	"	
Trichlorofluoromethane	ND	0.5	П	н	u	11	"	"	
1,1-Dichloroethene	ND	0.5	н	н	U	li	el .	н	
Methylene chloride	ND	0.5	п	н	0	н	11	Ŋ	
Freon 113	ND	0.5	н	н	u	н		"	
trans-1,2-Dichloroethene	ND	0.5	ч		11	н	w)	0	
1,1-Dichloroethanc	ND	0.5	11	н	11	Ħ	•	u u	
cis-1,2-Dichloroethene	ND	0.5	•	II)	11		11	v	
Chloroform	ND	0.1	D)	D.	и	н	u	11	
1,1,1-Trichloroethane	ND	0.5	U	0	н	N	11	II.	
Carbon tetrachloride	NĐ	0.1	0	ø	н	II .		16	
1,2-Dichloroethane	ND	0.1	41	10	11	ı	н	И	
Benzene	ND	0.1	41	le .	н	U	н	н	
Trichloroethene	ND	0.5	lt.	44	н	ı		н	
Toluene	ND	1.0	и	10	,,	u	И	н	
1,1,2-Trichloroethane	ND	0.5	Įt.	ıı	**	"	н	н	
Tetrachloroethene	24	0.1	н	H	0	11	ч	n	
Ethylbenzene	ND	1.0	н	н	•	и	ri	н	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н	"	lı	н	н	
m,p-Xylene	ND	1.0		rl	10	н	I)	P	
o-Xylene	ND	1.0	,	н	11	н	D		
1,1,2,2-Tetrachloroethane	ND_	0.5	н	н		H			
Surrogate: Dibromofluorometha	ne	107 %	75-125		rt	n	"	"	
Surrogate: 1,2-Dichloroethane-d		109 %	75-125			n	"	•	
Surrogate: Toluene-d8		101 %	75-125		n	н	"	"	
Surrogate: 4-Bromofluorobenzen	e	88.4 %	75-125		,,	"	"	"	



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Project Number: 26698724 / Maryland Square Al Phillips

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

## Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-13-10.5 (E703070-10) Vapor	Sampled: 19-Mar-07	Received	: 20-Mar-	07					
I, I-Difluoroethane (LCC)	ND	10	ug/i	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	И	н		н	pl	И	
Vinyl chloride	ND	0.1	ı	н	0	н	н	ч	
Chloroethane	ND	0.5	И	н	ų.	H		It	
Trichlorofluoromethane	ND	0.5	H	н	u	ls .		e e	
1,1-Dichloroethene	ND	0.5	II	н	10	14	u u	a	
Methylene chloride	ND	0.5	II	н	11	н	U	U	
Freon 113	ND	0.5	н	"	11	11	0	9	
trans-1,2-Dichloroethene	ND	0.5	"	н	11	II	**	41	
1,1-Dichloroethane	ND	0.5	н	н	11	н	•	4	
cis-1,2-Dichloroethene	ND	0.5	н	"	11	n	**	И	
Chloroform	ND	0.1	4	D.	н	н	10	į.	
1,1,1-Trichloroethane	ND	0.5	II'	*	н	И	ļ	N	
Carbon tetrachloride	ND	0.1	•	n	н	P	le	И	
1,2-Dichloroethane	ND	0.1	· ·	"	н	D.	И	н	
Benzene	ND	0.1	W	v	н	n	н	Į4	
Trichloroethene	1.7	0.5	"	10	н	n	"	n	
Toluenc	ND	1.0	11	,,	н	u,	И	н	
1.1,2-Trichloroethane	ND	0.5	11	u	n	u,	н	н	
Tetrachloroethene	37	0.1	11	11	н	9	н	н	
Ethylbenzene	ND	1.0	u	**	И	41	н	n	
1,1,2-Tetrachloroethane	ND	0.5	11	и	11	11	n	н	
m,p-Xylene	ND	1.0	11	ľ		и	н	н	
o-Xylene	ND	1.0	и	и	et e	14	4	н	
1,1,2,2-Tetrachloroethane	ND	0.5	И	н .					
Surrogate: Dibromofluoromethane		118%	75-1	25	"	n	"	"	
Surrogate: 1,2-Dichloroethane-d4		118 %	75-1	25	"	"	"	"	
Surrogate: Toluene-d8		104 %	75-1	25	"	"	#	"	
Surrogate: 4-Bromofluorobenzene		91.2 %	75-1	25	a	"	11	,,	



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Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-13-910.5 (E703070-11) Vapor	Sampled: 19-Mar-07	Receive	d: 20-Mar	-07					
1,1-Difluoroethane (LCC)	11	10	ug/l	0.1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	н	н	41	н	D	U	
Vinyl chloride	ND	0.1	н	"	11	II .	v	v	
Chloroethane	ND	0.5	ri	н	И	н	U	"	
Trichlorofluoromethane	ND	0.5	н	н	Į <b>I</b>	н	ч	4	
1,1-Dichloroethene	ND	0.5	N	n	И	n	11	le .	
Methylene chloride	ND	0.5	M	PI .	И	н	44	4	
Freon 113	ND	0.5	#I	н	И	н	11	11	
trans-1,2-Dichloroethene	ND	0.5	н	H.	И	H	v	11	
1.1-Dichloroethane	ND	0.5	4		Į.	n n	"	lu	
cis-1,2-Dichloroethene	ND	0.5	.,		н	H	11	ı	
Chloroform	ND	0.1	**	0	н	· ·	11	ĮI.	
1,1,1-Trichloroethane	ND	0.5	4	"	И		4	10	
Carbon tetrachloride	ND	0.1	•	u u	и	"	11	10	
1,2-Dichloroethane	ND	0.1	ur .	v	н	n	11	li .	
Benzene	ND	0.1	**	0	н	n,	11	и	
Trichloroethene	1.9	0.5	0	U	н	U		н	
Toluene	ND	1.0		v	11		и	н	
1,1,2-Trichloroethane	ND	0.5	v	v	н	0	н	н	
Tetrachloroethene	45	0.1	to	9	н	u	н	н	
Ethylbenzene	ND	1.0	*	41	,,	u	н	*1	
1,1,1,2-Tetrachloroethane	ND	0.5	v	11	at	10	н	n	
m,p-Xylene	ND	1.0	17	и	•	11	"	н	
o-Xylene	ND	1.0	10	и	.,	11	н	П	
1,1,2,2-Tetrachloroethane	ND ND	0.5		и	t)	41		н	
Surrogate: Dibromofluoromethane		107 %	75-1.	25	"	п	"	"	
Surrogate: 1,2-Dichloroethane-d4		107 %	75-1		#		"	**	
Surrogate: Toluene-d8		105 %	75-1	25	"	"	"	**	
Surrogate: 4-Bromofluorobenzene		92.8 %	75-1	25	"		"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032007-10

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### **Volatile Organic Compounds by EPA Method 8260B**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-13-20 (E703070-12) Vapor	Sampled: 19-Mar-07	Received:	20-Mar-07			•			
1,1-Difluoroethane (LCC)	690	10	ug/l	0,1	EC72201	21-Mar-07	21-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	**	41	н	n		II.	
Vinyl chloride	ND	0.1	11	10	"1	Pt	P	н	
Chloroethane	ND	0.5		11	"	и	И	10	
Trichlorofluoromethane	ND	0.5		le .	**	H	н	н	
1,1-Dichloroethene	ND	0.5	И	н	It	1)	н	П	
Methylene chloride	ND	0.5	н	H	n	,,	H	M	
Freon 113	ND	0.5	н	19		u	0	н	
trans-1,2-Dichloroethene	ND	0.5	и	и	#t	0	н	н	
1,1-Dichloroethane	ND	0.5	И	н	11	41	н	н	
cis-1,2-Dichloroethene	ND	0.5	н	н			H	н	
Chloroform	ND	0.1	н	P		•	Ħ	н	
1,1,1-Trichloroethane	ND	0.5	н	н	v	11	н	n	
Carbon tetrachloride	ND	0.1	н	н	v	10	н	ч	
1,2-Dichloroethane	ND	0.1	н	H	v	и	n	rl .	
Benzene	ND	0.1	n	71	u	h	**	11	
Trichloroethene	ND	0.5	ri	ri	0	н	**	II.	
Toluene	ND	1.0	н	Ħ	11	H	"	W.	
1,1,2-Trichloroethane	ND	0.5	"		u	н	v	0	
Tetrachloroethene	35	0.1	H	pl.	11	н		v	
Ethylbenzene	ND	1.0	Nt.	I)	Į¶	н	v	11	
1.1,1,2-Tetrachloroethane	ND	0.5	n	17	n	н	0	Ø	
m,p-Xylene	ND	1.0	P	0	н	н	11	II.	
o-Xylenc	ND	1.0	0	"	Į <b>t</b>	"	lt.	н	
1,1,2,2-Tetrachloroethane	ND	0.5			И	н	и . —	· · · · · · · · · · · · · · · · · · ·	
Surrogate: Dibromofluoromethane	?	111%	75-11	25	n	"	n	H	
Surrogate: 1,2-Dichloroethane-d4		115 %	75-12	25	н	n	"	n	
Surrogate: Toluene-d8		103 %	75-1.	25	"	n	"	"	
Surrogate: 4-Bromofluorobenzene		92.4 %	75-12	25	n	"	"	"	



811 Grier Dr.

Analyte

Las Vegas, NV 89119

Project: UR032007-10

Project Number: 26698724 / Maryland Square Al Phillips

Spike

Level

Reported: Project Manager: Ms. Lisa Lowe 23-Mar-07

%REC

Source

Result

%REC

Limits

RPD

RPD

Limit

Notes

## Volatile Organic Compounds by EPA Method 8260B - Quality Control **H&P Mobile Geochemistry**

Units

Reporting

Limit

Result

Blank (EC72201-BLK1)				Prepared & Ana	alyzed: 21-Ma	ir-07
1,1-Difluoroethane (LCC)	ND	10	ug/I			
Dichlorodifluoromethane	ND	0.5	n-			
Vinyl chloride	ND	0.1	**			
Chloroethane	ND	0.5	•			
Trichlorofluoromethane	ND	0.5	•			
1,1-Dichloroethene	ND	0.5	Đ.			
Methylene chloride	ND	0.5	•			
Freon 113	ND	0.5				
trans-1,2-Dichloroethene	ND	0.5				
1,1-Dichloroethane	ND	0.5	0			
cis-1,2-Dichloroethene	ND	0.5	0			
Chloroform	ND	0.1	0			
1,1,1-Trichloroethane	ND	0.5	0			
Carbon tetrachloride	ND	0.1	•			
1,2-Dichloroethane	ND	0.1	4			
Benzene	ND	0.1	11			
Trichloroethene	ND	0.5	44			
Toluene	ND	1.0	и			
1,1,2-Trichloroethane	ND	0.5	и			
Tetrachioroethene	ND	0.1	и			
Ethylbenzene	ND	1.0	и			
1,1,1,2-Tetrachloroethane	ND	0.5	н			
m,p-Xylene	ND	1.0	н			
o-Xylene	ND	1.0	н			
1,1,2,2-Tetrachloroethane	ND	0.5	н			
Surrogate: Dibromofluoromethane	2.69		"	2.50	108	7 <b>5-1</b> 25
Surrogate: 1,2-Dichloroethane-d4	2.63		"	2.50	105	7 <b>5</b> -12 <b>5</b>
Surrogate: Toluene-d8	2.48		"	2.50	99.2	75-12 <b>5</b>
Surrogate: 4-Bromofluorobenzene	2.48		"	2.50	99.2	75-125



Project: UR032007-10

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Notes and Definitions

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

#### Chain of Custody Record MOBILE 🕶 GEOCHEMISTRY H&P Project # URO 32007-10 2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159 3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995 Outside Lab: Holly Woodwapage: Collector: Lisa Lowe Project Contact: L.Lowe Address: 811 Grier Dr Client Project # 26698724 Location: Maryland Square Al Phillips Las Vegas NV 89119 Email: Lisa-Lowe @lurs corp.com Phone: 702-492-7923 Fax: 702-492-9149 Turn around time: 48 hr 8260B TO-15 EDF: Yes⊓ Noti Sample Receipt Intact: Yes [ No Global ID: Seal Intact: Yes No Z N/A Cold: ☐ Yes 7 No N/A (Received on Site) Special Instructions: analysis within 48 hrs. õ **DTSC/LARWQCB** Request con detection level \*Sample container labeled SUB-16-20.5 AL 3/20/07 oţ Full List Sample Container Field Point Name Vol Time Date Type Type Sample Name Trip Blank 400 97/10 gas TOORINGIN tedlar 2742 31196 5VB-16-5 548-16-0 0875 \* SVB. 16-85 0832 518-15 5 VB 15-15 1009 1322 SV8-15-20 5VB-14 5V8-14-10 548-14-20 Relinquished by (Signature) Abolty (1574) x y Relinquished by (Signature) (сотралу) 3/20/07 9 30 am H-140 Date Relinquished by: (Signature) Received by: (Signature) (company) \*Signature constitutes authorization to proceed with analysis and acceptance of condition on back. Disposal @ \$2.00 each Return to client Pickup Sample disposal instruction

# MOBILE GEOCHEMISTRY 24 38

# **Chain of Custody Record**

2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
3825 Industry Avenue, Lakewood, CA 90712 - ph 562.426.6991 - fax 562.426.699

Date:		
H&P Project #	UR032007-10	
Jutside Lah		

Client: URS	-					Collec	tor: _	الم	_ <u>_</u>	 محد	<u> </u>	Hal	14	$\omega$	<i>ر</i> ي د	φM	य व	P	age: _	2	of <u>2</u>	
Address: 811 Grice	NV 89119					Client Locati Fax: _	Projec on: <u></u>	ct # 2 <u>1</u> Vac	lele Y le	98 anc	/2 / <	74 241	ia	F √ <b>८</b> _	roject	Cont	act:	<u>کھے!</u> کھڑار	السا	<u> 2 W.C.</u>		
Email: Lisa-Love	ters Corp. Com Phone	702-4	192-792	<u> 13</u>		Fax: _	102	-49	2.4	1,40	1	· · ·		т	urn ar	ound	time:	4	8hv		<del></del>	
EDF: Yes  No  Global ID:	· · · · ·	S   In   S   C   N	tample Receintact: Yes Seal Intact: Yes Seal Intact: Yes Seal Intact: Yes Seal I/A (Received	pt	□ N/A	l □ ext				82	260E	3		ТО	-15	Fluenethane	□ TO-15		□ O2 [] N2			
Special Instructions: An Reques	alysis with	h in tector	48 m n krel	· · · · · · · · · · · · · · · · · · ·		H ☐ gasoline ☐ diesel	418.1 TRPH	8021 for BTEX/MTBE	BTEX / Oxygenates	TPH gas	VOC's	DTSC/LARWQCB	Ketones	Full List	BTEX/MTBE	$\Pi_{\mathcal{F}} = \prod_{i \in \mathcal{F}} H_i$	Naphthalene	Methane	Fixed Gases CO2		<u> </u>	Total # of containers
Sample Name	Field Point Name	Purge Vol Ti	me Date	Sample Type	Туре	·   E	4	80	ВТ	1	$\stackrel{>}{\sim}$	5	Ke	٦	BT	רכ י	Ž	ž	îÊ	į		卢
5VB-13 5	SVB-13	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	158 31.01	ngas	tedlar						X			[		7						1
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5/6-13 25	V	,	343 V	\$	<u> </u>	•					X					X						!
												_										,
Relinquished by (Signature)  Relinquished by (Signature)	dwa d	(con	npany) 3 (9)	Received	nby: (Signature) I by: (Signature)	ila	₽.	dE	` ` <b>X</b>	. <u></u> 	-	<u> </u>		(comb			Date	20/	07	Time.	30ar	<b>A</b>
Relinquished by: (Signature)			npany)		! by: (Signature)									(comp	any)		Date	<del></del> .	-	Time:		
*Signature constitutes authorization to	proceed with analysis and accep	tance of condition	on on back.	Sample o	disposai instruct	tion:	<u> </u>	<b>D</b> is	. — posal (¢	 § \$2.00	each	[		Return :	to client			Pickup	)	1		



23 March 2007

Ms. Lisa Lowe URS - Las Vegas 811 Grier Dr.

Las Vegas, NV 89119

RE: UR032107-11

Enclosed are the results of analyses for samples received by the laboratory on 21-Mar-07. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Janis Villarreal

Laboratory Director

H&P Mobile Geochemistry operates under CA Environmental Lab Accreditation Program Numbers 1317, 1561, 1667, 1745, 1746, 2088, 2278, 2543, 2579 and 2595.



URS - Las Vegas Project: UR032107-11

811 Grier Dr. Project Number: 26698724 / Maryland Square Al Phillips Reported: Las Vegas, NV 89119 Project Manager: Ms. Lisa Lowe 23-Mar-07

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVB-12-5	E703074-01	Vapor	20-Mar-07	21-Mar-07
SVB-12-10	E703074-02	Vapor	20-Mar-07	21-Mar-07
SVB-11-10	E703074-03	Vapor	20-Mar-07	21-Mar-07
SVB-11-910	E703074-04	Vapor	20-Mar-07	21-Mar-07
SVB-11-15	E703074-05	Vapor	20-Mar-07	21-Mar-07



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032107-11

Project Number: 26698724 / Maryland Square Al Phillips Reported:
Project Manager: Ms. Lisa Lowe 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-12-5 (E703074-01) Vapor	Sampled: 20-Mar-07	Received: 21-	Mar-07						
1,1-Difluoroethane (LCC)	210	10	ug/l	0.05	EC72202	22-Маг-07	22-Mar-07	EPA 8260B	Ε
Dichlorodifluoromethane	ND	0.5	D	III	14	n	4	U	
Vinyl chloride	ND	0.1	U	•	19	н	v	U	
Chloroethane	ND	0.5	e	•	И	н	•	4	
Trichlorofluoromethane	ND	0.5	n	n	н	н	4	4	
1,1-Dichloroethene	ND	0.5	v	v	11	n	•	11	
Methylene chloride	ND	0.5			II .	rl	lt	10	
Freon 113	ND	0.5		•	н	н	и	11	
trans-1,2-Dichloroethene	ND	0.5	4	4	Ш	ч		11	
1,1-Dichloroethane	ND	0.5		"	ш	n	11	10	
cis-1,2-Dichloroethene	ND	0.5	v	v	ш	н	40	9	
Chloroform	ND	0.1	4	4	н	н	11	11	
1,1,1-Trichloroethane	ND	0.5	10	4	н	н	11	11	
Carbon tetrachloride	ND	0.1	11	11	m	v.	le .	la .	
1.2-Dichloroethane	ND	0.1	41	11	н	0	H	и	
Benzene	ND	0.1	и	14	н	v	н	и	
Trichloroethene	ND	0.5	pr.	Į <b>i</b>	Ħ	u	11	н	
Toluene	ND	1.0		и	Ħ	11	li .	И	
1,1,2-Trichloroethane	ND	0.5	le .	и	at	14	н	н	
Tetrachloroethene	ND	0.1	14	н	ч	11	н	н	
Ethylbenzene	ND	1.0	и	и	m	11	п	н	
1,1,1,2-Tetrachloroethane	ND	0.5	14	н	Tr.	41	l4	н	
m,p-Xylene	ND	1.0	14	н		u	н	n	
o-Xylene	ND	1.0	н		**	"	И	н	
1,1,2,2-Tetrachloroethane	ND	0.5	н	Ш			р		
Surrogate: Dibromofluoromethar	ie	95.6 %	75-1	25	0	,,	,,	"	
Surrogate: 1,2-Dichloroethane-d		94.0 %	75-1	25	"	,,	"	"	
Surrogate: Toluene-d8		96.0 %	75-1	25	"	Ħ	"	"	
Surrogate: 4-Bromofluorobenzen	e	95.2 %	75-1	25	"	r	"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032107-11

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-12-10 (E703074-02) Vapor	Sampled: 20-Mar-07	Received:	21-Mar-07						
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC72202	22-Mar-07	22-Маг-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	u	v	н	н		41	
Vinyl chloride	ND	0.1	U	v	III	n	v	U	
Chloroethane	ND	0.5	ti .	v	l <del>1</del>	H	•	U	
Trichlorofluoromethane	ND	0.5	0	0	И	н	0	0	
1,1-Dichloroethene	ND	0.5	4	9	H	н	а	1)	
Methylene chloride	ND	0.5		v	н	n	"	u	
Freon 113	ND	0.5		v	H	11	u	W.	
trans-1,2-Dichloroethene	ND	0.5	ø	0	Ш	П	4	u u	
1,1-Dichloroethane	ND	0.5	D		je	П	11	u)	
cis-1.2-Dichloroethene	ND	0.5		v	и	н	v	v	
Chloroform	ND	0.1	0	ur .	И	н	10	v	
1,1,1-Trichloroethane	ND	0.5			н	н	11	•	
Carbon tetrachloride	ND	0.1		v	н	п	11	•	
1,2-Dichloroethane	ND	0.1		v	ш	н	11	11	
Benzene	ND	0.1	ø	9	н	н	μ	11	
Trichloroethene	ND	0.5	44	"	ч		11	41	
Toluene	ND	1.0	17	v	ш	17	и	11	
1,1,2-Trichloroethane	ND	0.5	10	9	Ш	n	И	10	
Tetrachloroethene	3.0	0.1	a	a	II .	n	и		
Ethylbenzene	ND	1.0	11	11	ш	at .	и	lt .	
1,1,1,2-Tetrachloroethane	ND	0.5	10	4	Ш	n	ļ	Į4	
m,p-Xylene	ND	1.0	la .	ĮI.	н	P	II.	И	
o-Xylene	ND	1.0	и		*1	*	И	И	
1,1,2,2-Tetrachloroethane	ND	0.5	II	и	Nt .	n,	H		
Surrogate: Dibromofluoromethane	2	94.0 %	75-12	25	. "	"	"	п	
Surrogate: 1,2-Dichloroethane-d4		97.2 %	75-12		**	"	"	n	
Surrogate: Toluene-d8		94.4 %	75-12	25	"	"	n	n	
Surrogate: 4-Bromofluorobenzene		95.2 %	75-12		"	"	"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032107-11

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-11-10 (E703074-03) Vapor	Sampled: 20-Mar-07	Received:	21-Mar-07	,					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC72202	22-Mar-07	22-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	11	11	ri	II.	la .	R	
Vinyl chloride	ND	0.1	11	19	н	**	н	И	
Chloroethane	ND	0.5	11	11	н	n	и	и	
Trichlorofluoromethane	ND	0.5	11	ĮI.	"	I)	И	μ	
1,1-Dichloroethene	ND	0.5	11	·	n	v		и	
Methylene chloride	ND	0.5	11		"	v	"	ls .	
Freon 113	ND	0.5	**	Į.	н	4	н	Н	
trans-1,2-Dichloroethene	ND	0.5	Į <b>i</b>	11	n	u	н	и	
1,1-Dichloroethane	ND	0.5		11	н	v		н	
cis-1,2-Dichloroethene	ND	0.5	44	14	н	•	11	н	
Chloroform	ND	0.1	11	11	н	v	н	II .	
1,1,1-Trichloroethane	ND	0.5	н			v	н	н	
Carbon tetrachloride	ND	0.1	14	И	н	ø	н	н	
1,2-Dichloroethane	ND	0.1	p.	Į.	"	11	н	n	
Benzene	0.1	0.1	и	и	P	и	п	н	
Trichloroethene	ND	0.5	н	н	l)	Į.	н	4	
Toluene	ND	1.0	H	Į.	U	и	n	n	
1,1,2-Trichloroethane	ND	0.5	и	н	U	И	H	н	
Tetrachloroethene	0.5	0.1	н	П	0	И	4	"	
Ethylbenzene	ND	1.0	н	н	U	и	n	н	
1,1,1,2-Tetrachloroethane	ND	0.5	н	п	v	11	н	н	
m,p-Xylene	ND	1.0	n	н	10	41	H	n	
o-Xylene	ND	1.0	н	н	11	10	н	н	
1,1,2,2-Tetrachloroethane	ND	0.5	<u>.</u>	н			н	n	
Surrogate: Dibromofluoromethane	<b>;</b>	94.8 %	75-1.	25	,,	,,	"	"	
Surrogate: 1,2-Dichloroethane-d4		99.2 %	75-1.	25	**	"	"	**	
Surrogate: Toluene-d8		94.8 %	75-1.	25		n	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	75-1.		n	"	"	"	



811 Grier Dr.

Las Vegas, NV 89119

Project: UR032107-11

Project Number: 26698724 / Maryland Square Al Phillips

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

#### Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-11-910 (E703074-04) Vapor	Sampled: 20-Mar-07	Received:	21-Mar-	07					
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC72202	22-Mar-07	22-Mar-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	И	14	н	"	н	н	
Vinyl chloride	ND	0.1	И	įi.	ч	U	н	н	
Chloroethane	ND	0.5	И	и	"	U	"	п	
Trichlorofluoromethane	ND	0.5	И	н	N	*		н	
1,1-Dichloroethene	ND	0.5	н	н	ч	9	H	н	
Methylene chloride	ND	0.5	и	"	"	v	n	n	
Freon 113	ND	0.5	И	И	4	10	н	н	
trans-1,2-Dichloroethene	ND	0.5	И	H		11		ч	
1,1-Dichloroethane	ND	0.5	н	n	"	**	n	M	
cis-1,2-Dichloroethene	ND	0.5	И	Н	*	9	н	N	
Chloroform	ND	0.1	П	н	•	11	"	п	
1,1,1-Trichloroethane	ND	0.5	п	н		**		at	
Carbon tetrachloride	ND	0.1	н	Ш	0	я	4	Ŋ	
1,2-Dichloroethane	ND	0.1	н	н	10	11		D.	
Benzene	0.1	0.1	4	n	**	и	v	et	
Trichloroethene	ND	0.5		"	11	16	0	b)	
Toluene	ND	1.0	н	н	11	н	u	n	
1,1,2-Trichloroethane	ND	0.5	H	4	11	н	•	4r	
Tetrachloroethene	0.4	0.1		"	и	Н	0	0	
Ethylbenzene	ND	1.0		Ħ	И	н		Ŋ	
1,1,1,2-Tetrachloroethane	ND	0.5	**	•	I	н		v	
m,p-Xylene	ND	1.0	4	n	Į4	н		v	
o-Xylene	ND	1.0	u u		Į4	н	u,	v	
1,1,2,2-Tetrachloroethane	ND	0.5				н	•	0	
Surrogate: Dibromofluoromethane		96.8 %	75-1	125	п	,,	"	"	
Surrogate: 1,2-Dichloroethane-d4		99.2 %	75-1	125	#	"	#	#	
Surrogate: Toluene-d8		94.4 %	75-1	125	n	"	μ	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	75-1	125	If .	"	#	**	



811 Grier Dr. Las Vegas, NV 89119 Project: UR032107-11

Project Number: 26698724 / Maryland Square Al Phillips Reported:
Project Manager: Ms. Lisa Lowe 23-Mar-07

## Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVB-11-15 (E703074-05) Vapor	Sampled: 20-Mar-07	Received:	21-Mar-07						
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC72202	22-Mar-07	22-Маг-07	EPA 8260B	
Dichlorodifluoromethane	ND	0.5	U	v	н	н	11	u	
Vinyl chloride	ND	0.1	v	•	Ш	н	11	0	
Chloroethane	ND	0.5	9	•	Ш	н	4	a	
Trichlorofluoromethane	ND	0.5			п	n	**	W.	
I.1-Dichloroethene	ND	0.5	11	17	н	p)	и	10	
Methylene chloride	ND	0.5	41	41	н	n.	и	11	
Freon 113	NĎ	0.5	10	4	n	"	и	и	
trans-1,2-Dichloroethene	ND	0.5	11	11	н	H	н	И	
1,1-Dichloroethane	ND	0.5	И	16	н	n	н	ji .	
cis-1,2-Dichloroethene	ND	0.5	ĮI.	ji .	n	P	n	It	
Chloroform	ND	0.1	и	и	n	#	н	И	
1,1,1-Trichloroethane	ND	0.5	la .	И	н	n.	н	и	
Carbon tetrachloride	ND	0.1	И	н	н	II.	н	и	
1,2-Dichloroethane	ND	0.1	И	и		"	н	И	
Benzene	ND	0.1	la .	И	н	N	п	И	
Trichloroethene	ND	0.5	H	н	н	n,	н	H	
Toluene	ND	1.0	И	н	n	v	н	п.	
1,1,2-Trichloroethane	ND	0.5	н	п		v	н	н	
Tetrachloroethene	ND	0.1	ш	н	ur .	10	н	Н	
Ethylbenzene	ND	1.0	Ħ	н		0	**	н	
1,1,1,2-Tetrachloroethane	ND	0.5	н	н	•	11	н	и	
m,p-Xylene	ND	1.0	н	н	u	п	н	H	
o-Xylene	ND	1.0	Ħ	n		И	н	н	
1,1,2,2-Tetrachloroethane	ND	0.5	н	н			" 		
Surrogate: Dibromofluoromethane	,	94.8 %	75-1.	25		"	"	"	
Surrogate: 1,2-Dichloroethane-d4		98.8 %	75-1.		"	"	"	"	
Surrogate: Toluene-d8		93.6 %	75-1		<i>n</i>	H	"	**	
Surrogate: 4-Bromofluorohenzene		96.8 %	75-1.		и	n	"	н	



Analyte

Project: UR032107-11

811 Grier Dr. Las Vegas, NV 89119 Project Number: 26698724 / Maryland Square Al Phillips

Spike

Level

Source

Result

Project Manager: Ms. Lisa Lowe

Reported: 23-Mar-07

RPD

%REC

Limits

%REC

RPD

Limit

Notes

### Volatile Organic Compounds by EPA Method 8260B - Quality Control H&P Mobile Geochemistry

Units

Reporting

Limit

Result

Batch EC72202 - EPA 5030				
Blank (EC72202-BLK1)				Prepared & Analyzed: 22-Mar-07
1,1-Difluoroethane (LCC)	ND	10	ug/l	
Dichlorodifluoromethane	ND	0.5	v	
Vinyl chloride	ND	0.1	v	
Chloroethane	ND	0.5	v	
Trichlorofluoromethane	ND	0.5	u	
1,1-Dichloroethene	ND	0.5	41	
Methylene chloride	ND	0.5	41	
Freon 113	ND	0.5	10	
trans-1,2-Dichloroethene	ND	0.5	41	
1,1-Dichloroethane	ND	0.5	11	
cis-1,2-Dichloroethene	ND	0.5	11	
Chleroform	ND	0.1	10	
I, I, I-Trichloroethane	ND	0.5	41	
Carbon tetrachloride	ND	0.1	ls.	
1,2-Dichloroethane	ND	0.1	ls.	
Вепгепе	ND	0.1		
Trichloroethene	ND	0.5		
Toluene	ND	1.0		
1,1,2-Trichloroethane	ND	0.5		
Tetrachloroethene	ND	0.1	ls.	
Ethylbenzene	ND	1.0	и	
1,1,1,2-Tetrachloroethane	ND	0.5	n	
m,p-Xylene	ND	1.0	n	
o-Xylene	ND	1.0	н	
1,1,2,2-Tetrachloroethane	ND	0.5	11	
Surrogate: Dibromofluoromethane	2.38		"	2.50 95.2 75-125
Surrogate: 1,2-Dichloroethane-d4	2.42		"	2.50 96.8 75-125
Surrogate: Toluene-d8	2.40		"	2.50 96.0 75-125
Surrogate: 4-Bromofluorobenzene	2.39		"	2.50 95.6 75-125



Project: UR032107-11

811 Grier Dr.

Project Number: 26698724 / Maryland Square Al Phillips

Reported: 23-Mar-07

Las Vegas, NV 89119

Project Manager: Ms. Lisa Lowe

#### Notes and Definitions

E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is

considered an estimate (CLP E-flag).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

# MOBILE GEOCHEMISTRY MOBILE GEOCHEMISTRY

# **Chain of Custody Record**

⋈	2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
	3825 Industry Avenue, Lakewood, CA 90712 • ph 562.426.6991 • fax 562.426.6995

Date:
H&P Project # <u>1/R032107-11</u>
Outside Lab:

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Las Vegas	, NV 89119_						Locati	on: 🖊	1a	~1	an	<u> </u>	291	مر	1	A	11	hil	1:05	; i			
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*Signature constitutes authorization to	proceed with analysis and accept	lance of cor	idition on ba	ack.	Sample di	sposal instructio	on:		Disp	oosal @	\$2.00	each	Г		Return t	o clien	!		Pickup				